International Association for Fire Safety Science

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Newsletter

http://www.iafss.org

April 2012, Newsletter No 32 Editor in Chief: Guillermo Rein

Fire whirl induced by multiple flames

The cover of this issue is illustrated with a photo taken by researchers from the University of Science and Technology of China showing a fire whirl induced by multiple flames during an experimental investigation of the dynamics of large fires in urban and forest scenarios. An array of 225 heptane pools were simultaneously ignited and a fire whirl spontaneously emerged, lasting for several seconds. The interaction of the multiple flames created an ambient eddy circulation necessary for onset of the whirl.
The image was submitted to the 2011 10th IAFSS Symposium Photo Competition by
Naian LIU, Linhe ZHANG, Zhihua DENG and Koyu SATOH from University of Science and Technology of China.

IAFSS was founded in 1988 with the primary objective of encouraging research into the science of preventing and mitigating the adverse effects of fires and of providing a forum for presenting the results of such research

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Editorial

Our Aims

The IAFSS Newsletter aims to be a platform for spreading the work of IAFSS members and where fire safety scientists can read about what cannot be readily found elsewhere else, thus favouring news, opinions, hot topics, novel ideas and controversial issues.

New Sections

Two new sections have been recently introduced in the Newsletter. The *Cover Image*, illustrating the front cover, is open to submissions from any IAFSS members and is selected by the Editorial Board (the accompanying *Cover Article* will be introduced in the next issue). The *Featured Articles* are by invitation only from the Editor-in-Chief.

Editorial Board

Our team continues growing. Naian Liu joins us as Contributing Editor, and Michael Gollner has been promoted to Associate Editor due to his important and consistent contributions in the last two issues.

Search for a New Name

We are looking for an official name/title for the IAFSS newsletter. It should be a short and appealing name, of one or more words, and related to fire safety science. The current name "IAFSS Newsletter" is informative but rather dull. Please send your ideas to the Editor-in-Chief g.rein@ed.ac.uk before June 1, 2012 for consideration. The winning name will be used in the August issue and the person who proposed it announced.

Call for Contributions

To succeed with the Newsletter, it is important that we receive contributions from the IAFSS member-ship at large. Please consider submitting articles, news, announcements and letters related to fire safety science and IAFSS members. These could be collected from your department, institution, country or region.

For the next issue (No. 33), the deadline for submissions is August 10, 2012. Please send your contributions to the Editor-in-Chief at g.rein@ed.ac.uk.

Signed: Guillermo Rein, Editor-in-Chief IAFSS Newsletter, University of Edinburgh.UK

Letter from the Chair

Since the prior Newsletter, we have had a number of exciting developments. Perhaps, the most thrilling of them is open access to all papers of the previous IAFSS Symposia. This has been a long process starting with the establishment of the IAFSS Digital Archives, with open access initially implemented for the Fire Research Notes and the Proceedings of the Symposia of the Asia-Oceania Association for Fire Science and Technology. Finally, at its last meeting in Maryland, the IAFSS Committee resolved to initiate open access to the Proceedings of the IAFSS Symposia themselves, at first, on a trial basis for one year. I am glad to report that this has now been implemented. Our thanks go to Terry Fay of Hughes Associates who did wonderful job in devising and implementing the changes to the web site of the IAFSS Digital Archives.

Springer Science has offered free access to Fire Technology to members of IAFSS. Fire Technology is an important technical journal of the National Fire Protection Association, an organisation with which IAFSS shares many common goals. Since its establishment in 1965, the journal has had great influence on shaping the development of fire safety technologies, impacting the development of performance standards and testing protocols, and publishing significant contributions on fire modelling and human behaviour. IAFSS members are part of the Editorial Board of the journal, contribute research papers or edit special issues of the journal. We thank Jennifer Evans, the Editorial Director with Springer Science+Business Media for making this possible, and again Terry Fay for implementing the access within the Digital Archives. On that note, I would like to mention Fire Science Reviews, a new open-access fire review journal recently launched by Springer that fills a need of the fire research community for a fire safety review journal. The Editor-in-Chief of Fire Science Reviews is Dr Craig Beyler of Hughes Associates, the Immediate Past Chairman of our Association.

The Proceedings of the last Symposium have been included in the indexing data bases of EI Compendex, Google Scholar and SciVerse Scopus, and are in the pipeline for consideration by ISI Conference Proceedings Citation Index. Together with open access, this will increase the visibility of papers published in the Proceedings and will enhance their impact in the field.

We need to recognise Terry Fay, and Profs Naian Liu (University of Science and Technology of China, Hefei) and Peter Sunderland (The University of Maryland, USA), both for working with Elsevier, Google and Thomson Reuters, and for raising the importance of indexing of the papers within the Association.

Our latest membership list has just been sent out by the Secretariat. No doubt you have noticed a number of new student members. This is an outcome of another decision of the IAFSS Committee at its last meeting in Maryland. Please welcome our new members as they are the future of the Association, and the profession. I would like to invite all students to contribute to this Newsletter. Please update everyone with news from your University and from your part of the world, as done in this issue in two articles by students of the Europe's new Masters degree that uniquely exploits strengths of the fire safety programs in Edinburgh, Lund and Ghent, by holding classes at these three locations. For those of you who perform research projects, please share with us your findings and their significance by means of Featured Articles and photographs that capture the beauty of your science.

Preparations for the 11th Symposium hosted by the University of Canterbury in New Zealand are well under way. The Symposium will have traditional Committee structure proven by the success of our past meetings, and will include workshops and English mentoring. Prof W K Chow (the Hong Kong Polytechnic University, HK, China) will Chair the Symposium. Prof C Fleischmann (The University of Canterbury, NZ) will Chair the Arrangements Committee, Dr Y He (University of Western Sydney, Australia) will Chair the Program Committee and Prof A Trouvé (The University of Maryland, USA) will Co-Chair the Program Committee, Mr D Brein (Karlsruhe Institute of Technology, Germany) will Chair the Awards Committee, and the Publication Committee (i.e., the Proceedings' Editors) will comprise Dr D Nilsson (Lund University, Sweden), Dr R Jansson (SP Fire Technology, Sweden) and Prof P van Hees (Lund University). Yaping He and Arnaud Trouvé have already worked out the make-up of the Program Committee and have been busy contacting its members.

Our Association carries the tradition of a regional balance among the Americas, Asia-Oceania and Europe/ Africa. In early 1990s, the fire researchers in the Asia-Oceania organised themselves into a regional organisation named Asia-Oceania Association for Fire Science and Technology that has been operating under the auspices of IAFSS. This year, between 17 and 20 Oct, AOAFST will be holding its 9th Symposium on

Fire Science and Technology, at USTC, Hefei, China. The first Symposium of the AOAFST also took place in Hefei, exactly two decades ago. Prof Naian Liu who Chairs the Symposium's Program Committee intends to publish the Proceedings in Procedia Engineering, an open access Elsevier journal. The deadline for submission of papers is 30 April 2012. I encourage you to visit the Symposium's web page at http://aosfst.csp.escience.cn/dct/page/1

From time to time, we all make mistakes, even in our best research papers. Starting with the Proceedings of the next Symposium in New Zealand, authors may submit brief errata to the papers published in the Proceedings from the previous Symposia. If you wish to do this, in due course, please contact the Proceeding's Editors of the next Symposium.

I would like to conclude this letter by thanking Dr Guillermo Rein, the Editor-in-Chief, and his editorial team for bringing to us this edition of the Newsletter.

It's brilliant.

Signed: Bogdan Dlugogorski, Chair IAFSS, at the University of Newcastle, Australia

Free Student Registration

The Committee of the IAFSS are inviting all fire science and engineering students to apply for free membership of the Association. To apply for a free student membership you must be enrolled in a technical college or a University and studying for a technical degree, BSc, Masters or PhD, in a field that is related to fire science and engineering. Membership will be valid until their studies have been completed and acceptance of applications is at the discretion of the IAFSS.

Students must complete the on-line Student Application Form here: http://iafss.org/html/studentmembersReg.htm

Digital Archive is now Open Access

At the last meeting held during the 10th symposium, the IAFSS Executive Committee resolved to convert the IAFSS Proceedings to an open access publication. The new Digital Archive (http://www.iafss.org/publications) has been designed to allow both members and non-members access to the full text papers of the IAFSS Proceedings. The Digital Archive will also allow IAFSS members access to the full text papers in Fire Technology, courtesy of Springer.

If you have not signed up for the new digital Archive site, please do so now (http://www.iafss.org/index.php?/register/signup).

Please note, your account on the previous Digital Archive Site (iafss.haifire.com) will not work on the new site. Everyone will need to register before accessing the PDFs. Registration only takes a few minutes and upon completion, you will have full access to the IAFSS Proceedings, Fire Research Notes, and AOFST Proceedings. If you register with the same email address you used when paying your dues, you will automatically be upgraded to Member status and gain instant access to the Fire Technology papers. I would also like everyone to update their bookmarks to point to the new Digital Archive site, as the old web version (http://iafss.haifire.com) will be taken offline in a few months.

With the launch the of the Digital Archive site, we are looking to begin the redesign of the main IAFSS website. The new site will have community features such as a calendar of events, online discussion forums, and the federated search tool. If there is something you believe would be of value to our community or you wish to help develop the new site, feel free to contact me at tfay@haifire.com.

Signed: Terry Fay, Hughes Associates

IAFSS Proceedings Included in Indexing Services

Publishing strong fire research papers does not ensure that they are readily found and available for citation by others. With so many journals and venues publishing modern research, only papers that appear readily in on-line searches can realize their full potential and impact. The IAFSS has recently succeeded in placing the IAFSS Proceedings in the major research citation indexing services, and this will improve the reputation of the Proceedings as a scholarly publication. These efforts are summarized below.

EI Compendex

Now, all articles of IAFSS proceedings from 2000 (6th) until 2011 (10th) are included in Elsevier for inclusion in EI Compendex.

EI Compendex is one of the most comprehensive engineering literature databases available to engineers, which was started in 1884, and is now published by Elsevier. The name "Compendex" stands for COMPuterized ENgineering inDEX. Compendex currently contains over 9 million records and references over 5,000 international sources including journals, conferences and trade publications. Approximately 500,000 new records are added to the database annually from over 190 disciplines and major specialties within the engineering field. Coverage is from 1969 to the present, and is updated weekly.

SciVerse Scopus

Now, all articles of IAFSS proceedings from 2000 (6th) until 2011 (10th) are included in Scopus. Scopus, officially named SciVerse Scopus, is a bibliographic database containing abstracts and citations for academic journal articles. With 46 million records, Scopus is the world's largest abstract and citation database of peer-reviewed literature. It covers nearly 18,000 titles from over 5,000 international publishers, including coverage of 16,500 peer-reviewed journals in the scientific, technical, medical, and social sciences (including arts and humanities). It is owned by Elsevier and is available online by subscription. Searches in Scopus incorporate searches of scientific web pages through Scirus, another Elsevier product, as well as patent databases.

Google Scholar

The IAFSS website and the Digital Archive have been modified to meet the requirements for inclusion in Google Scholar and have been submitted for review.

Google Scholar is a freely accessible web search engine that indexes the full text of scholarly literature across an array of publishing formats and disciplines. The Google Scholar index includes most peer-reviewed online journals of Europe and America's largest scholarly publishers, plus scholarly books other non-peer reviewed journals.

Thomson Reuters Conference Proceedings

We have applied to the Conference Proceedings Citation Index (CPCI). This is in progress. CPCI, formerly called ISI Proceedings, is an integrated index within Web of Science. It is an index to the published literature of the most significant conferences, symposia, seminars, colloquia, workshops, and conventions in a wide range of disciplines, from anthropology to zoology. It enables you to track emerging ideas and new research in specific fields before the material appears in journal literature.

Thomson Reuters Science Citation

As a conference series, the IAFSS Proceedings are not eligible for indexing by Science Citation Index (SCI). In contrast, the Proceedings of Combustion Institute is indexed by SCI (this followed its transformation from proceedings into a bi-yearly journal). Accessible through Web of Science, SCI is a subscription service that indexes only articles from select journals with the highest reputations.

Signed: Bogdan Dlugogorski, Terry Fay, NaiAn Liu, Peter Sunderland, members of the IAFSS Indexing Working Group.

11th IAFSS Symposium 2014 in Canterbury

The 11th IAFSS Symposium will be held at the University of Canterbury, New Zealand in February, 2014. We are looking forward to hosting delegates from around the world at the University during the southern hemisphere summer. We plan to host a technical program that is as good as those that have taken place at

Campus of the University of Canterbury, New Zealand

previous Symposia and also have a range of social events that will give people a chance to sample some local food and world famous New Zealand wine. We hope delegates will also take the opportunity to spend some time traveling around our corner of the world. New Zealand has much to offer in terms of scenery, native flora and fauna, and a mixture of Maori, European and Asian cultures. The more adventurous might like to try bungee jumping, jet boat rides or mountaineering while others might be more content with whale watching or less challenging day walks.

Signed: Michael Spearpoint, University of Canterbury

12th IAFSS Symposium 2017 in Lund

The 12th IAFSS conference will be held in 2017 at Lund University, Sweden. The time of the conference will most probably be in June. During that time of the year the days will be long and nights will be short so that there is plenty of time for networking! See you all in Lund in 2017.

Signed: Patrick van Hees, Lund University

The major university building in Lund (by Kennet Ruona).

Are you an IAFSS member? If not, you should be it's just £25 per year! and Student Membership is now FREE

International Association for Fire Safety Science

You are invited to be a member of a professional association that is committed to facilitating communication and providing leadership for the Fire Science and Engineering Community.

Membership of the IAFSS provides international networking opportunities.

The IAFSS has now opened the contents of its nine Proceedings for free online Open Access

Visit our website for more information and sign up today!

www.iafss.org

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Membership Benefits

- Substantial discount off IAFSS conference registration fees
- Access to the contact information for all IAFSS members
- Subscription to the IAFSS newsletter
- Eligibility to hold a Management Committee seat
- Eligibility for Student Awards
- Opportunities to Influence progress in fire safety around the world
- Reduced subscription to Fire Safety Journal
- Free access to the journal Fire Technology

Annual Membership fees only £25 per calendar year.

FIRE SAFETY IAFSS SCIENCE

NEWS FROM OTHER INSTITUTIONS

News from the University of Cantabria

Prometheus Thematic Network:

The GIDAI Group at the University of Cantabria has launched the PROMETHEUS Thematic Network (New approaches for Fire and Evacuation Modelling) to identify and resolve challenges and shortcomings of current modeling tools for fire and evacuation.

The network counts with the initial participation of the following EU universities active in fire science: Ghent University, Lund University, University of Edinburgh, Politecnico di Torino, University of Coimbra, Polytechnic Institute of Bragança, Technical University of Denmark, Universidad Politecnica de Catalunya and Universidad de Cantabria. The Spanish Ministry of Science and Innovation has awarded a small grant for the implementation of this initiative.

The approach to understand fire dynamics phenomena and evacuation processes is now inconceivable without the use of advanced computer models. However, this area is in continuous development by the limitations that still exist in the models, especially in relation to its reliability, accuracy and computational cost.

A key point will be increasing the interaction and collaboration of the international scientific community that shares the same theme. In this sense, it will provide a technology platform for the dissemination and development of scientific initiatives (iPrometheus).

Signed: Mariano Lázaro, Universidad de Cantabria

News from University of California

Space.com recently featured NASA's Flame Extinguishment Experiment, or FLEX which has conducted more than 200 tests since March, 2009 to better understand how fire behaves in microgravity. The research could lead to improved fire suppression systems aboard future spaceships, and it could also have practical benefits here on Earth.

"We hope to gain a better knowledge of droplet burning, improved spacecraft fire safety and ideas for more efficient utilization of liquid fuels on Earth," project leader Forman Williams, of the University of California, San Diego, said in a statement. "The experiments will be used to verify numerical models that calculate droplet burning under different conditions."

Check out some videos of droplet combustion aboard the space station and the article at http://www.space.com/13766-international-space-station-flex-fire-research.html

Signed: Michael Gollner, University of California at San Diego

News from University of Central Lancashire

New Fire Laboratories

The Centre for Fire and Hazard Science at University of Central Lancashire (UCLan), UK, has moved into a £14m new building equipped with state of the art laboratories, including a 250 m^2 suite of fire laboratories occupying half of the top floor. In addition to a full range of standard test apparatuses ISO 5658 (IMO LIFT), ISO 5660 Cone calorimeter, ISO 5657 Radiant ignitability test, ISO 11925 Small flame ignitability test and several industry standard tests, it has a fully equipped fire toxicity smoke and corrosivity test methods, ISO TS 19700 Steady state tube furnace, ISO 5659 Smoke Density Chamber, NFX 70-100 French Railway Test , all interfaced to FTIR analysis. It also has a fully equipped suite of microscale thermo-analytical facilities including thermogravimetric analysis, differential scanning calorimetry, simultaneous thermal analysis interfaced to gas phase FTIR, pyrolysis GCMS, microscale combustion calorimeter and a parallel plate rheometer with environmental chamber going up to 500°C.

Standardized Quantification of Fire Toxicity

The mass transport industry (air, rail and sea) urgently need a reliable method for generating and quantifying toxic fire effluents, to test materials for regulatory fire safety purposes. Dr Stec at UCLan was awarded with the funding for a PhD student to take a well established apparatus, designed to measure smoke density to generate and quantify toxic fire products. The smoke chamber (ISO 5659) is probably the most widely used fire test apparatus in the world. It is incorporated into the national standards of most countries. However, use of the existing apparatus for fire toxicity testing has been spoilt by problems of irreproducibility preventing wide and rapid acceptance. This project will pioneer the use of reproducible FTIR monitoring of toxicants from the smoke chamber. In addition, it is hoped that the UCLan approach will provide insight into the processes of toxic gas generation – vital for further research in this area.

Real-scale House Fire Test

Smoke, fire gases (HCN, CO, CO_2, and O_2), and temperature measurements were taken from a burn experiment conducted British 1950's semi-detached house. The lounge was furnished with UK fire retardant furniture, and the sofa ignited by four sheets of crumpled newspaper. The results showed how quickly lethal concentrations of toxic effluent reached the upstairs bedrooms. The experimental work was carried out in collaboration with the West Midlands Fire Service Integrated Risk Management (IRM) team and results will be published soon.

Recent fire test in a real-scale British 1950's semi-detached house.

Congratulations to the six PhD students graduated from UCLan in fire science since 2011. These are Jennifer Rhodes, Parina Patel, Adam May, David J Kind, Luke A Hollingbery and Artur Witkoski.

Signed: Anna Stec, University of Central Lancashire

News from University of Corsica

On July 13, 2011, Pauline Bartoli successfully defended her PhD entitled *Forest fires: Improvement of the knowledge on the coupling between flame and vegetative fuels* at the University of Corsica, France. This is an official joint French-British degree (first ever of its kind) conferred by the University of Corsica and the University of Edinburgh. She was supervised by Prof. Paul-Antoine Santoni at University of Corsica, Prof. Albert Simeoni at University of Corsica (now at WPI, USA), and Prof. Jose L. Torero at University of Edinburgh.

This thesis was made possible thanks to the active support of the Department of Science and Technology of the French Embassy in London. The work consisted in studying the influence of vegetation bulk and particle properties on its burning dynamics. The aim was to implement tools, such as calorimetry that are widely used in the fire community but still scarcely used for wildland fire research. After defending her thesis in English, the half-French half-British committee unanimously granted Pauline the title of Doctor of Philosophy with honors from the Universities of Corsica and Edinburgh.

Dr Pauline Bartoli, first ever PhD conferred jointly by French and British Universities.

Signed: Albert Simeoni, WPI

News from COWI Group

SAIPHS (The Summit Air Institute for Preservation, Health and Safety) is an institution dedicated for the advancement of and fostering education about hypoxic air technology. Fire prevention applications are currently in focus. The institute has been set-up as an initiative by the COWI Group in coordination with the Hypoxic industry and stakeholders. SAIPHS activities include meetings and a newsletter for all members.

Participants attending the first SAIPHS meeting in Riga May 2009.

News from Czech Technical University

The European COST Action TU0904 Integrated Fire Engineering and Response is an EU funded network of 22 European countries and New Zealand which brings together about eighty representatives drawn from the various research disciplines of fire engineering, fire safety, structural design, building control and fire services in various countries, on the general theme of performance-based integrated fire engineering and response, see http://fire.fsv.cvut.cz/ifer.

Three Working Groups consider different themes of the Action: WG1 Fire Behaviour and Life Safety, chairman Guillermo Rein and Co-chairman Florian Block, focuses on the behaviour and the effects of building fires, and combines this research-based knowledge with the most effective means of protecting human life against the occurrence of fire in the built environment. WG2 Structural safety, Chairman Leslaw Kwasniewski, Co-chairman Raul Zaharia, covers passive protection measures and the recent developments of structural fire engineering, and also new materials and technologies. Crucial questions of structural fire engineering concern changes in the use of the buildings and the current questions arising from energy saving and protection of the environment after fire are taken into account. WG3 Integrated Design, Chairman Paulo Vila Real, Co-chairman Jyri Outinen, brings together design and research across the disciplines of fire in the built environment.

The work plan is based on a series of Work Packages. The results of WP1 State-of-the-art report are available in the website.

Attendees to the Application of Structural Fire Engineering Conference in Prague, April 2011

About six short-term scientific missions are organized yearly to involve young researchers in experimental and numerical work at hosting institutions. This year, a School for Young Researchers has been organized to take place in Malta University 11-13 April 2012.

The network also organizes conferences, called Application of Structural Fire Engineering (ASFE). The latest ASFE Conference took place in Prague 29 April 2011, and the proceedings are available in the website. The next conference is scheduled for 2013, April in Prague.

Signed: František Wald, Czech Technical University

News from Technical University of Denmark

The fire safety group at DTU, located within the department of Civil Engineering continues growning. Janne Gress Sørensen, has started her PhD on evacuation of people with visual impairments. The second new member of the group is Josephine Carlsen, currently a practitioner at the department. She works with uniaxial models for non-linear FE-analysis of reinforced concrete at elevated temperatures and FE-modeling of superlight element under fire.

Congratulations to Grunde Jomaas who has been promoted to Associate Professor.

In June 2011, the DTU Master of Fire Safety degree was accredited by ACE Denmark, the independent government institution in charge of accrediting study programs at Danish universities.

The Fire Safety Day 2012 will be help on April 18th in Lund, Sweden. The Fire Safety Day is a yearly event with shifting responsibility carried by the Fire Safety Group at the Technical University of Denmark and the Department of Fire Safety Engineering and Systems Safety at Lund University, Sweden. See the Upcoming Event section for more details.

Signed: Anne Dederichs, DTU

News from University of Edinburgh

During the second semester of 2011, one postdoc and six new PhD students joined the fire group at the University of Edinburgh: Dr Paolo Pironi (Italy), Juan Hidalgo (Spain), Liming Jiang (China), Emma Reid (UK), Martyn McLaggan (UK), Zafiris Triantafyllidis (Greece) and Daryan Othman (Iraq). During the same time, three students received the PhD degree: Dr Ying Liu, Dr Kate Anderson and Dr Adam Ervine. News arrived recently that Dr Guillermo Rein is joining the Department of Mechanical Engineering at Imperial College London (UK) starting this summer.

The last IAFSS Symposium held at the University of Maryland was attended by 18 members of the Edinburgh fire group who presented a total of 6 papers, 4 workshop talks, 9 posters, and 5 photos. Congratulations to Angus Law who received the Best PhD Thesis Award in Europe/Africa for his thesis titled "*The Assessment and Response of Concrete Structures Subject to Fire*" (2010), and to Cristian Maluk who received the Best Student Poster Award for his work on the fire behavior of novel concrete structural elements.

Photo of some of fire group members at Edinburgh on Sept 2011.

Congratulations to Angus Law, Jamie Stern-Gottfried, Martin Gillie and Guillermo Rein for winning the 2011 Lloyd's Science of Risk Prize in the Technology Category. The prize was for their research paper "The Influence of Travelling Fires on a Concrete Frame" (published in *Engineering Structures*). This is the second time in a row that Edinburgh wins this award. The best runner-up in the same category went also to Edinburgh, to Sung-han Koo, Jeremy Fraser-Mitchell and Stephen Welch for their paper "Sensor-steered fire simulation" (published in *Fire Safety Journal*).

The new interdisciplinary program called Integrating Technical and Social Aspects of Fire Safety Engineering and Expertise (IT-SAFE) was launched in November

This social-science research project is designed to improve fire safety and the quality of our built environment by better interaction and integration of social and engineering research. It is supported by The University of Edinburgh, The Ove Arup Foundation, and The Royal Academy of Engineering. http://www.stis.ed.ac.uk/research_projects/it-safe

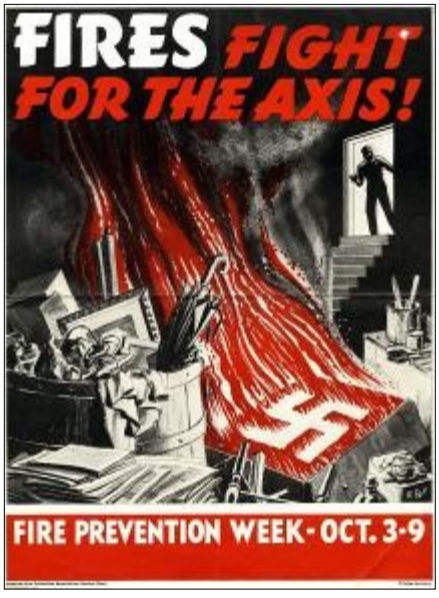
The magazine *Scientific American* published in Jan 2012 the Letter to the Editor title "An inexcusable omission…" sent by Luke Bisby regarding their Sept issue article on the collapse of the WTC (full letter at http://edinburghfireresearch.blogspot.co.uk/2011/09/inexcusable-omission.html)

We continue communicating views, news and achievements in our blog http://edinburghfireresearch.blogspot.com

Signed: Guillermo Rein, University of Edinburgh

World War II Fire Safety Propaganda Posters

In June 2009 the students in Fire Safety Engineering group from The University of Edinburgh began the challenge of scanning more than 40,000 documents previously located in the *BRE Fire Research Archive* at the BRE headquarters in Watford, UK. This archive contains documents published during the early and mid -20th century, in almost every topic related to fire science. The scanned documents are available online for the entire fire community at the Digital Preservation of the FRS/BRE Fire Research Archives open access collection (http://www.era.lib.ed.ac.uk/handle/1842/3879).



Two samples of the recently rediscovered WWII posters

Some time ago, the PhD student John Gales came across a file containing World War II fire safety propaganda posters designed and printed by the National Fire Protection Association (NFPA) in Boston, Massachusetts, between 1942 and 1944.
The single act of finding the posters, which might have otherwise been lost in time, was a gift on John's behalf to the entire fire community. The posters went through a high quality scanning process and then uploaded into the open access collection. The rareness of the posters found by John was something unique, and like this, many other documents have been found and uploaded into the open access collection (http://hdl.handle.net/1842/5719).

The project is now expanding fast and the Digital Preservation of the FRS/BRE Fire Research Archives online open access collection has now 291 documents, being this just the tip of the iceberg of what could be achieved.

Signed: Cristián Maluk, University of Edinburgh

News from University of Ghent

On November 17th 2011, the PhD student Steven Verstockt won the Fireforum Award 2011 for best scientific research on fire safety. FireForum Awards is a new Belgium prize to celebrate excellence in fire safety engineering. It is organized by Fire Forum in cooperation with the Federal Public Service Home Affairs and the Federal Civil Security Knowledge (KCCE). The dissertation title is *Multi-modal Video Analysis for Early Fire Detection* (https://biblio.ugent.be/publication/1969758 and was supervised by Prof. Bart Merci (Ghent University), Prof. Rik Van de Walle (Ghent University) and Dr. ir. Sofie Van Hoecke (University College of West-Flanders).

Dr Verstockt receives the award for Best Scientific Research

Signed: Steven Verstockt, University of Ghent

News from University of Greenwich

2011 has been a great year for completing higher degrees at the Fire Engineering Group (FSEG). A total of 8 PhD students and 1 MSc by Research completed their dissertations and successfully completed their vivas. Congratulations to Dr Nitish Chooramun, Dr Hui Xie, Dr Michael Kinsey, Dr Anand Veeraswamy, Dr Steve Deere, Dr Yasmina Mohedeen, Dr Hongjun Jiang, Dr Daniel Burton and Mr Ton Adams.

New and recently finished research projects at FSEG include:

EU FP7 project AIRCRAFT Fire (Jan 2011 – Dec 2013)

The project aims to increase passenger survivability in aircraft fires, with a particular focus on the next generation of aircraft which utilize composite materials. The project involves 11 partners, 6 of which are universities. The role of FSEG is to enhance and apply the advanced fire and evacuation modelling tools SMARTFIRE and airEXODUS to fire situations involving composite materials.

EU FP7 project IDIRA (May 2011 – April 2015)

What is missing so far in the European Union are disaster management procedures, tools and

systems which fully take into account the specific characteristics and requirements of large-scale international cooperation in emergency situations. Project IDIRA will address this problem. The role of FSEG is to develop an urban scale evacuation modelling capability, based on the building EXODUS software for live large-scale incident situations such as floods, earthquakes or terrorist inspired incidents. Where appropriate, this will also link in with fire simulation.

EU FP7 project GETAWAY (Nov 2011 – Oct 2014)

Efficient evacuation from transport terminals is usually constrained by a lack of detailed knowledge of the geometry. In most cases, the population attempts to evacuate via the way they entered, bypassing or ignoring emergency exits.

GETAWAY will tackle this problem through the design and development of an intelligent Active Dynamic Signage System (ADSS). The role of FSEG in the project will be to assess the performance of the ADSS through experimentation, introduce the concept of ADSS into the buildingEXODUS evacuation model in overground and underground stations and develop a faster than real time evacuation simulation engine that can be used to assist in the selection of optimal evacuation paths during an actual emergency.

FSEG PhD graduating class of 2011 with proud

supervisors, Dr Peter Lawrence, Prof Ed Galea and Dr Angus Grandison

Rail Evacuation Research

FSEG have recently completed work on a three year project partially funded by the United States Federal Railroad Administration through the John A. Volpe National Transportation Systems Center of the Department of Transportation. The project involved the development of a rail version of the EXODUS software – known as railEXODUS, specifically designed to simulate egress from rail cars.

EU FP6 Project SAFEGUARD

Understanding how people behave in emergency situations within maritime settings is vital if we are to design evacuation efficient vessels and evacuation procedures for crew to follow. Unfortunately, little data exists relating to passenger response time or for full-scale validation of evacuation models specific to maritime environments. As part of project SAFEGUARD a full-scale unannounced evacuation exercise was undertaken by FSEG on the Royal Caribbean International cruise ship, Jewel of the Seas (JOS). With a capacity of 2500 passengers, 842 crew and 12 passenger decks, the JOS is one of the world's largest passenger ships afloat. The evacuation exercise took place on the 31 July, 2011 at 09:01 on the day after departure from the UK. A total of 2292 passengers were on board. The data collection involved 94 CCTV and 12 specially positioned digital video cameras. The data represents the largest response time data set ever collected – on land or sea. Data collected from this trial will be used to shape new international evacuation regulations for passenger ships.

Jewel of the Seas, site of the evacuation exercise

Awards and Prizes

In 2011 FSEG won the Royal Aeronautical Society's Bronze Award for their publication: "Fire and Evacuation analysis in BWB aircraft configurations: computer simulations and large-scale evacuation experiment" by Galea, Filippidis, Wang, and Ewer, published in The Aeronautical Journal 114, pp 271-277, April 2010.

In 2011 FSEG were finalists in the THE AWARDS, "Outstanding Engineering Team of the Year" category for the design of the futuristic Blended Wing Body aircraft which was part of the European Union Framework 6 project NACRE. FSEGs role on project NACRE was to determine whether more than 1,000 passengers and crew could evacuate quickly and safely in the event of a post crash fire. for details, see http://www.gre.ac.uk/schools/cms/news_events.

For more news and details, see the FSEG facebook page at: http://www.facebook.com/pages/Fire-Safety-Engineering-Group-FSEG/136784013003514.

Signed: Ed Galea, University of Greenwich

On the Needs of Evacuation Modeling Users

The team at www.Evacmod.net – an evacuation modeling portal for the simulation of human behavior during emergency situations - have conducted an online survey of pedestrian and evacuation model users' experiences and needs. The analysis of the results, conducted by Enrico Ronchi from Politecnico di Bari and Michael Kinsey from University of Greenwich suggest that many users are unaware of other models. Based on a review of the available evacuation models and to help address this issue, the team has developed a Model Directory in collaboration with Erica Kuligowski from NIST. This project allows model developers to gain up-to-date information about models on the site themselves.

Signed: Michael Kinsey, University of Greenwich

News from Hong Kong Polytechnic University

Large fire in Fa Yuen Street

A big fire occurred at Fa Yuen Street, Mongkok, Hong Kong, China on 30 November, 2011. The fire started from burning combustibles in hawker stalls outside a building, though whether it was caused by accident or arson is not yet known.

A hawker stall burning during the Fa Yuen Street fire (Photo from The Standard)

The big stall fires with tall flame height acted at the adjacent buildings. Post-flashover fires were set up at the mezzanine and first floors, spreading flame and smoke to other parts of the buildings. There were illegal constructions in those buildings, with some blocking the evacuation paths.

Nine occupants were killed consequently. Full investigation report will be released later, after completing the inspection and sorting out the legal procedures.

This has raised public concern on fire safety and studying the hidden problems of fire, particularly for those projects failing to comply with the prescriptive codes and going through fire engineering approach (FEA) or performance-based design (PBD).

View at height of at Fa Yuen Street fire (Photo from The Standard)

A dangerous argument to be avoided is that considering scenarios with very low design fires allow for reducing construction cost. But note that the fire load density for residential buildings in Hong Kong is high, as reported consistently years ago and recently to be around 1400 MJ/m^2. This value surveyed is significantly higher than the maximum allowed value of 1135 MJ/m^2 in Hong Kong. Fire officers are worrying that burning such high amount of combustibles will give a big fire easily as experienced recently, including this Fa Yuen Street fire incident.

The authority is watching the use of low design fire in FEA/PBD design closely. An Annual Inspection Scheme on the FEA/PBD projects was proposed. Tighter inspection on those existing projects might be implemented after this big fire. All these actions are aimed at protecting firefighters in such areas of higher risk of getting big post-flashover fires.

Signed: W.K. Chow, Hong Kong Polytechnic University

Safety Science approved as first-level discipline

To safeguard public safety in China, a long-term mechanism for nurturing talents in the field of safety science and engineering has been established. With the leadership and support of the State Administration of Work Safety and the former Ministry of Human Resources of the People's Republic of China, along with the continuous endeavors of scholars and researchers in related safety disciplines, Safety Science and Engineering was approved as one of the first-level disciplines in the Discipline Category of Degree Conferring and Talents Cultivation (DCDCTC) issued by the Academic Degrees Committee of the State Council and Ministry of Education of the People's Republic of China on March 8, 2011. DCDCTC categorizes all disciplines into 13 major groups: philosophy, economics, history, education, literature, history, science, engineering, agriculture, medicine, military science, management and art, with 110 first-level disciplines belonging to these 13 major disciplines. Safety Science and Engineering is classified under Engineering.

As a branch of Safety Science and Engineering, fire science and engineering can obviously be put under this discipline. Following the relevant policy introduced by the Academic Degrees Committee of the State Council Academic Degrees Committee and Ministry of Education, DCDCTC can provide guidance in nurturing talents and developing the discipline of safety science and engineering in China. It can also supervise the setting up and management of disciplines in universities and research institutes.

This is a great event in the development of safety science and technology in China and has drawn overwhelming response in the related safety fields. It makes Safety Science and Engineering an independent discipline for the higher-level degree (e.g. master and doctoral degree). It will play an important role in promoting the development of the discipline, training high-level personnel in safety science and technology, and thus improving public safety. This will be a milestone in the development of the safety discipline in China.

Signed: Professor Yang Shuhong, China Occupational Safety and Health Association. Translated by W.K. Chow, Hong Kong Polytechnic University.

News from EU International Master of Science in Fire Safety Engineering

The simultaneous first and second editions of The "International Master of Science in Fire Safety Engineering (IMFSE)" are running well.

The first year students have just finished their first semester and after the well-deserved Christmas holiday are ready to settle in Lund and start their second semester. The second year students, meanwhile, are closer and closer to their graduation with all courses finished and with only the master thesis research and reporting work to go during their upcoming fourth and last semester.

For the IMFSE edition 2012, the best students out of about 200 applicants are being selected for the prestigious scholarships of Erasmus Mundus (16), Lloyd's Register Educational Trust (1) and the new tuition fee scholarship of Fire Protection Consultants – FPC (1).

IMFSE will be audited by the NVAO in 2012 as a part of the auditing schemes of master programs by the government of Flanders, for continued accreditation of the degree. An extensive Self Assessment Report has already been submitted and the IMFSE team is preparing for the actual audit.

FireForum Award

IMFSE has received the inaugural FireForum Award 2011 in the Social Value category. FireForum Awards is a new Belgium prize to celebrate excellence in fire safety engineering. It is organized by Fire Forum in cooperation with the Federal Public Service Home Affairs and the Federal Civil Security Knowledge (KCCE). The first edition of the awards was celebrated at the Koloniënpaleis, Tervuren, on 17 Nov 2011.

Prof Bart Merci (right) receives the award as coordinator of IMFSE

As a reminder for recently joined IAFSS Members: The IMFSE program is an Erasmus Mundus degree by the EU and coordinated by Ghent University (Prof. Bart Merci) in association with Lund University (Prof. Robert Jönsson) and The University of Edinburgh (Prof. José Torero).

Signed: Elise Meerburg, IMFSE, Ghent University

News from University of Maryland

The Fire Apparatus Manufacturers' Association (FAMA) has awarded its 2011 Phillip L. Turner Fire Protection Scholarship to UMD FPE student Chad Lannon, a sophomore. He received the scholarship in recognition of his outstanding academic achievement and commitment to the fire service. He is a Baltimore County firefighter.
Associate Professors Peter B. Sunderland and Arnaud C. Trouvé have been appointed to the Executive Board of the U.S. Eastern States Section of the Combustion Institute. Sunderland was appointed as At-Large Member for 2012-2017. Trouvé was renewed as Papers/Programs Chair for 2012-2013.
Assistant Professor Stanislav I. Stoliarov was awarded a grant from the U.S. Federal Aviation Administration to develop flaming combustion calorimetry for material samples with a mass of just several milligrams.
M.S. Student Yi Zhang and Associate Professor Peter B. Sunderland are observing inverse flame quenching limits for a project sponsored by the U.S. National Institute of Occupational Safety and Health. Inverse flames can arise when firefighter respirators leak in under-ventilated fires. Quenching limits of normal flames have been widely reported, but these are the world's first measurements of inverse flame quenching limits. The typical quenching limit for air injecting into ethylene was measured to be 0.57 mg/s, compared to a typical limit for normal hydrocarbon flames of 0.05 mg/s.

Marc R. Nyden has joined the department as Research Professor. Nyden has a Ph.D. in chemistry from Wesleyan University and a B.S. in chemistry from the University of Bridgeport. He worked as research chemist in the building and fire research laboratory of the U.S. National Institute of Standards and Technology (NIST) from 1986-2011. He is widely recognized for his work in reactive molecular dynamics modeling.

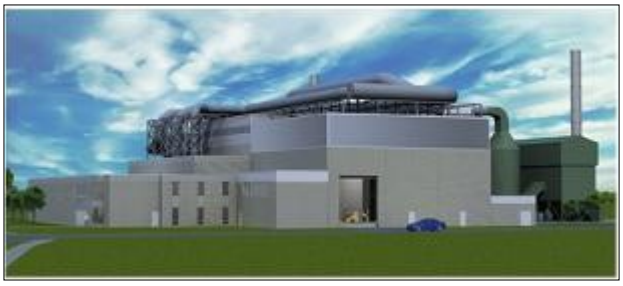
The University of St. Thomas (St. Paul, MN, USA) and the University of Maryland (College Park, MD, USA) have announced a joint agreement to promote a Master's in Fire Protection Engineering program in the Twin Cities region of Minnesota. The program, focused exclusively on the practice of fire protection engineering, will be the first program in the Midwest USA region in 25 years. The 30-credit master's program will be offered to students beginning in the Spring 2012 term. Course-work will be a combination of on-campus work at the University of St. Thomas (UST) and distance learning with the Department of Fire Protection Engineering at the University of Maryland (UMD). Interested students with degrees in Engineering are eligible to apply. The Memorandum of Understanding between UMD and UST allows selected graduate program courses from the UST to apply directly to the UMD Fire Protection Engineering Masters of Engineering program.

For more information please visit www.stthomas.edu/engineering. and http://www.oaee.umd.edu/grad/fire.

Signed: Peter Sunderland, University of Maryland

News from NIST

The National Fire Research Laboratory (NFRL), located on the U.S. National Institute of Standards and Technology (NIST) Gaithersburg campus in Maryland, is adding a new, unique facility that will serve as a center of excellence for fire performance of structures ranging in size from small components to large systems up to 9 m high. The construction of the expansion will be completed in late summer of 2012, and the commissioning and outfitting of the new facility will take about one year. The new laboratory is expected to be fully operational in the fall of 2013.



Rendering of the future NIST National Fire Research Laboratory

The expansion will add almost 2000 m^2 of laboratory space, tripling the size of the existing laboratory (1000 m^2),and a second environmental control system which will allow testing fires up to 20 MW.

The test area will consist of an 18 m × 27 m post-tensioned strong floor with anchor points on a 0.61 m × 0.61 m grid. To one side of the strong floor will be a 9 m high × 18 m wide post-tensioned concrete strong wall with anchor points on the same grid as the strong floor. The strong wall will act to stabilize a test specimen to prevent uncontrolled failure and provide lateral restraint. The laboratory will also be furnished with configurable reaction frames used to restrain and stabilize test structures.

The new laboratory will accommodate a conventional 2 story × 2 bay × 3 bay building. Gravity loading will be simulated using hydraulic actuators and fixed loads. Fully involved compartment fires, fueled by gas or liquid fuel, wood cribs, or actual building contents, will be employed to simulate real fire conditions

A large hood, centered above the strong floor, will collect the smoke and provide calorimetry measurements. The smoke will be treated to meet strict environmental requirements. The facility will also be equipped with a conditioning pit for curing concrete specimens.

The new capabilities will allow NIST to:

• Test the performance of full-scale structures subjected to realistic fires and structural loading under controlled laboratory conditions.

• Develop an experimental database on the performance of large-scale structural connections, components, subassemblies, and systems under realistic fire and loading.

• Validate physics-based models to predict fire resistance performance of structures.

• Enable performance-based standards for fire resistance design of structures and foster innovations in design and construction.

The work of the laboratory will be focused on the Engineering Laboratory mission: to promote US innovation and industrial competitiveness in areas of national priority by anticipating and meeting the measurement science and standards needs for technology-intensive manufacturing and construction in ways that enhance economic prosperity and improve the quality of life.

The laboratory will be led, managed and operated as a collaborative facility through a public-private partnership between NIST and industry, academia, and other government agencies. Scientists and engineers from industry, academia, and government agencies will work side-by-side with NIST researchers to address significant technical problems and fill critical knowledge gaps, and international scientists and engineers will be welcome to partner with NIST in areas of mutual interest. Projects may be funded by industry and government on a cost-shared basis. Opportunities for National Research Council Postdoctoral Research Associateships are also available to qualified U.S. citizens who have held a doctoral degree less than five years at the time of application.

Please see position openings for Research Structural Engineers listed at the bottom of this newsletter.

Signed: Jiann C. Yang, National Institute of Standards and Technology

News from University of Newcastle

The Australian Research Council has funded Professors Bogdan Dlugogorski and Eric Kennedy to investigate the formation of NOx during blasting of ammonium nitrate emulsion explosives and to develop mitigation strategies. Some mines in the Bowen Basin and Hunter Valley (major coal mining areas in Australia) had their personnel exposed to fume, which is a statutory Notifiable Incident. Generation of "orange dust" has become an area of focus for mines inspectors, and some mines have had their operations temporarily suspended as a consequence of excessive emissions. The project is co-funded by Dyno Nobel Asia Pacific, a major manufacturer of ammonium nitrate emulsion explosives in Australia and around the world.

The Australian Research Council has also funded an acquisition of a new gas chromatograph - time of flight mass spectrometer that is scheduled to arrive in early 2012, to be deployed for structure elucidation of environmental contaminants formed in fires and industrial processes. The equipment will add to the already well instrumented fire chemistry laboratory. Among other analyses, the laboratory has capacity to identify and quantitate almost all congeners of polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans that often form in chemical fires. Such an analysis quantitates PCDD/F at ppb levels in analysed extracts; i.e., ng/g.

Signed: Bogdan Dlugogorski, University of Newcastle

News from the FPRF and NFPA

Home Cooking Fire Mitigation

The Fire Protection Research Foundation was asked by the National Institute of Standards and Technology to develop an action plan to mitigate loss from home cooking fires by investigating safety technologies related to home cooking. Cooking related fires are a leading cause of U.S. fire loss. Elements of the study include an in-depth assessment of cooking fire scenarios, a review of current and emerging technologies, and development of an assessment methodology to consider the utility and effectiveness of mitigation technologies against a range of fire and use scenarios and other criteria.

On July 14, 2011 leaders in the fire safety community met together at a workshop in Baltimore, Maryland to review the results of the Foundation study and to develop an action plan for implementation of these technologies.

Modeling Tools for Detection in High Air Flow Environments

The goal of this ongoing project is to develop a validated set of modeling tools that can be used for providing reliable analysis of detection performance in IT/telecom facilities. The indirect losses of fire due to business interruption in IT/telecom facilities can far outweigh the direct property loss. Airflow containment solutions are being introduced to increase energy efficiency. But from a fire safety design perspective, this creates a high airflow environment that dilutes the smoke, which poses challenges for detection and suppression. Currently there are no quantitative methods for estimating this dilution effect.

Student Research at NFPA 2012 Conference and Expo

The NFPA Research Section will be co-hosting a networking reception at NFPA's 2012 Conference and Expo in Las Vegas on June 12. As part of this event, we will be giving students an opportunity to share their findings from fire-related research projects. The NFPA Research Section Executive Board invites current students to submit an abstract of their research work, completed or in progress, for review by a panel comprised of members from the NFPA Research Section. Students submitting accepted abstracts will be invited to provide a poster presentation of their research at the NFPA Research Section event on the evening of June 12th.

The abstract should address a topic in the area of fire and life safety related research, testing, analysis, applications or science. Preference will be given to work being supervised, reviewed or guided by a university/ college faculty member or other well-qualified professional/organization, for credit toward a degree.

Students will submit abstract via email to rfahy@nfpa.org by March 31, 2012. For details, visit http://www.nfpa.org

Signed: Kathleen Almand, The Fire Protection Research Foundation, NFPA

News from Lund University

On December 16th Olof Ekman defended successfully his PhD titled "Perceptions of Trust and National Perspectives in Multinational Crisis Management: An Examination of the European Union Military Strategic Level". Faculty opponent was Prof. David Alexander, Global Risk Forum, Davis, Switzerland

The PhD thesis can be downloaded from the Lund website http://www.brand.lth.se/publications (together with previous PhD dissertations as well as research reports, licentiate theses and master theses by the department)

On January 1st a new PhD student Hanna Palmqvist joined the department. She holds a BSc in fire protection engineering and an MSc in risk management and safety engineering and will work in the new project on Capacity Assessments.

On April 18th, the department will organize the second Fire Safety Day in cooperation with DTU, Denmark. The day will put focus on fire research in Scandinavia. The conference language is English. Fire Safety Day shall be a meeting point for all of you who are interested in and work with different aspects for fire. The day shall give a lot of opportunity to tie band between fire-industry, municipalities and University and there will be posters of master thesis. At Fire Safety Day you will have the opportunity to get information on different aspects within fire research. The program will be available at the website of the department (www.brand.lth.se) as well as registration possibilities from February 15th.

Last year the department started a project with focus on a methodology to identify fire risks with respect to antagonistic attacks in multifunctional/complex buildings and to define fire safety engineering solutions. The department welcomes any input from other research groups or from people, which are aware of good case studies.

Signed: Patrick van Hees, Lund University

News from University of Science and Technology of China

Celebrating 20 years of SKLFS

The State Key Laboratory of Fire Science (SKLFS), located in University of Science and Technology of China is the only Chinese research institution in the field of fire science. Prof. Weicheng Fan is the founder of SKLFS. In 1992, while under construction, SKLFS was approved by the China Academy of Sciences to open to the public. Since then, SKLFS has undergone unprecedented growth for 20 years, and has developed rapidly to be one of the world's most eminent fire laboratories. SKLFS has also contributed as the leading institute to realize the prosperity of fire safety science in China. SKLFS conducts frontier basic and interdisciplinary

researches that combine state-of-the-art knowledge and approaches of chemistry, physics, mechanics, thermo-physics (heat transfer, combustion, etc.), information science, computer science, electronics, automation and material science to investigate fire dynamics and basic principles of fire safety technologies. The abundant researches of SKLFS covered wide areas including pyrolysis and ignition, fire plume dynamics, extreme fire phenomena, compartment fire, fire modeling, fire risk assessment, fire detection, fire retardant, smoke control and fire extinguishment. Currently SKLFS has 44 researchers including 22 professors and 17 associate professors.

During the past decade, SKLFS has produced nearly 60 patents and 1000 refereed papers indexed by Web of Science (SCI). Among these there are several dozens of papers were published in the Proceedings of the Combustion Institute, Combustion and Flame, and Combustion Science and Technology, and almost a hundred papers in Fire Safety Journal and Journal of Fire Sciences. All the papers of SKLFS received more than 9000 SCI cites. Also more than 200 international proceedings papers were sponsored by SKLFS.

SKLFS pursues to keep itself at the very forefront of fire science discovery and engineering excellence. SKLFS achieves this mission through a strong linkage between basic research and applied research and engineering. SKLFS contributed to the technological development of fire retardant, fire early warning, detection and extinguishment in construction and industrial fields. The innovative technologies by SKLFS have been successfully applied to hundreds of large and high-rise buildings in China, including Sports Stadiums of 2008 Olympic Games, the Great Hall of People, China Central Television, etc. SKLFS ever won three times of China National Award for Science and Technology Progress.

SKLFS has successfully established the bachelor-master-doctor degree education system in the specialty of fire safety. Over 700 students got their degrees in SKLFS, including 210 doctors and 250 masters. SKLFS won China National-Level Teaching Achievement Awards twice.

SKLFS initiated the establishment of Asia-Oceania Association for Fire Safety Science and Technology (AOAFST), and Prof. Weicheng Fan, as one of the major founders, ever held the Chairman of AOAFST for six years. He also held the Executive Member of IAFSS and the Vice Chairman of International FORUM of Fire Research Directors. SKLFS was the major co-organizer of the 8th International Symposium on Fire Safety Science which was successfully held in Beijing in 2005.

Students conducting a fire whirl experiment at SKLFS labs

In addition, SKLFS has participated in many international research programs in fire safety field. SKLFS has developed cooperative relationships with many international famous universities and academic institutions. Recent issued agreements include those with NIST-BFRL (in building fire safety, 2006), The Illinois Fire Service Institute (in fire and emergency, 2006), The Construction Technology Institute of the National Research Council of Italy (in building and industrial fire, 2006), NIST-EL (in wildland-urban interface fire, 2011), and so on.

Signed: NaiAn Liu, State Key Laboratory of Fire Science.

News from SPFE

New President

Professor James A. Milke takes office as President of the Society of Fire Protection Engineers (SFPE) for 2012. Milke is a Professor and the Chair of the Department of Fire Protection Engineering at the University of Maryland. Milke has served on the Society's Board of Directors since 2004 and is an SFPE Fellow. SFPE Fellows represent a distinguished group of members who have attained significant stature and accomplishment in engineering. In 2009 he received the SFPE John L. Bryan Mentor Award and the Harold E. Nelson Award in 2002.

SFPE President James A. Milke

2011 Peter Lund Award

At its Annual Awards Luncheon in Portland, Oregon on October 24, 2011, the SFPE presented its 2011 D. Peter Lund Award to Ai Sekizawa. Professor Sekizawa is with the Graduate School of Global Fire Science and Technology at the Tokyo University of Science.

The award is made by the SFPE Board of Directors in acknowledgment of contributions to the advancement of professional recognition of the fire protection engineer. It is named in honor of D. Peter Lund, the first executive director of SFPE.

Source: SFPE blog, http://blog.sfpe.org

SFPE Knowledge Network

In 2012 SFPE launched a new service for our members - an online community called the SFPE Knowledge Network. A place to find and connect with friends and colleagues from the FPE community and join/visit group pages based on common interests. In addition users can share resources, post questions and provide answers to community users. http://www.sfpe.org

Source: SFPE

News from Tokyo University of Science

New Doctoral Course in Fire Science

As of April 1st, 2012, Tokyo University of Science (TUS) starts a new Doctoral Course in Fire Science and Technology at the Graduate School of Global Fire Science and Technology.

The Master's Course in Fire Science and Technology at TUS, established in April 2010, was the first postgraduate course in Asia specialized in fire science and fire protection engineering as introduced in IAFSS Newsletter No 29. This course provides high quality science and engineering based on education and training to open new career paths for those who are already working in industries of fire safety and also students seeking to acquire expertise in those fields. The picture shows one scene in the class of "Experimental Study on Fire Dynamics." Further, here is the most current and important news, namely the start of a new Doctoral Course in Fire Science and Technology as of April 2012.

Aiming at mitigating the fire risk in mega cities of Asia where rapid urbanization is taking place, we intend to nurture highly qualified professionals who can assess the fire risk of all types of premises and has the capability to appropriately choose and apply protection measures.

Doctoral course is aimed at enhancing students' research capabilities in the field of fire science and fire protection engineering. Doctoral students with basic academic skills and specialized expertise clarify the problems on basic and applied researches and solve them by applying precise methods for scientific analysis. It is hoped that human resources with highly specialized skills and expertise cultivated in this course address the fire safety issues concerning new architectures and spaces constructed in urban areas and new materials developed for energy conservation and so on.

Signed: Masayuki Mizuno, Tokyo University of Science

Call for Proposal using the Fire Test Facilities at TUS

In 2009, Center for Fire Science and Technology, Tokyo University of Science (TUS) was authorized by the Government (Ministry of Education, Culture, Science and Technology) of Japan as a Joint Research & Experiment Center, and since then we have been promoting and implementing the joint research projects, 10 themes per year in average in cooperation with researchers both in and outside our university. The projects have been intended only at the domestic research organizations until the last year, but starting from this fiscal year a gate for application to this Joint Research & Experiment will be opened to foreign research institutions as well.

Interior view of full-scale Fire Test Hall at TUS

The subjects of joint research shall be expected to contribute to mitigation of fire damage and loss greatly, using the large-scale fire test facility (see pictures below) for the purpose of solution of practical issues. In addition, the findings of research should be published in principle.

A representative of the application must be an academic or a researcher who belongs to a research institution, or those who are admitted to have equal research capability by Director of Center for Fire Science and Technology, TUS, and also must be the person who has been engaged in the research on fire safety science. The researcher who has a doctoral degree is desirable. In this regard however, technical staff and graduate students can be included as collaborators.

For details, such as the application method, please refer to the website http://gcoe.moritalab.com/eng

News from University of Ulster

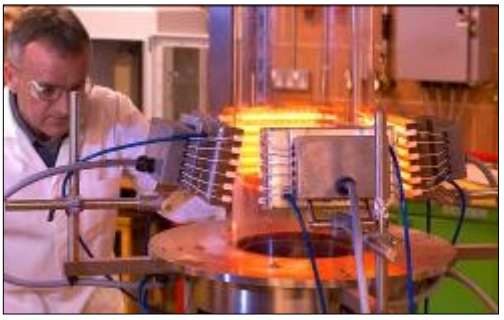
Fire dynamics and materials lab at FireSERT

New advanced materials and products are emerging on a daily basis in all aspects of human activities and needs. The ignition, toxicity and flammability resistance of these materials is an essential performance requirement for their safe use and disposal. In a recent EU FP6 Predfire NANO project, a scientific methodology has been developed and validated for polymer composites to predict large-scale fire behavior employing key intrinsic properties extracted from small-scale tests together with computational fluid and fire dynamics (CFD) calculations. This methodology is being continually improved and applied to design fire safe materials and products such as fire doors.

In particular, we evaluate the fire retardation effectiveness of nanocomposites. We have developed and applied a tool for predicting large-scale burning behavior of polymer CNT nanocomposites (in combination with other Halon-Free Fire Retardants) using intrinsic properties extracted from small-scale measurements. Thus, it is possible to screen various formulations using mg quantities before verifying their performance in mesoscale and large scale experiments. The focus is on both identifying the key intrinsic properties of these materials needed for predicting their fire behavior and relating their dependence on their physical and chemical structure of the composite polymer. For this purpose , a series of small-scale tests is conducted using Rheometry, XRD, TGA, DSC, FTIR the cone calorimeter at different heat fluxes, which allow determination of key ignition and flammability properties.

These properties could then be incorporated in pyrolysis models to calculate the ignition and burning behaviors in the cone calorimeter, or in computational fluid dynamics (CFD) models to predict the behavior in enclosure fires. The methodology was first developed and tested for a PA6 polymer silica nanocomposite and subsequently applied for other polymer nanocomposites (PBT and EVA). The fundamental merit of our work is to provide a validated methodology for a material flammability certificate and develop molecular based modeling of fire properties of nanocomposite polymers. The broader impact of our work is to fulfill the ultimate objective of fire research and the development of fire safe materials based on first principles using CNT from waste synthesis process, an aim beyond the current state of the art.

Less recently, one European project Predfire Nano finished in 2010 and an EPSRC project on facade fires finished in 2009. In addition, the fire dynamics and materials lab at FireSERT was awarded two EU FP7 grants being part of larger research consortia, namely ENFIRO and AircraftFIRE.



Flammability test conducted in the FireSERT labs

Full -scale fire test on composite floor and cellular steel beams

As part of an international major research initiative, dealing with the behavior of long span cellular beams in steel framed buildings under fire, a large-scale fire test incorporating 15m long cellular beams was carried out. The fire test was sponsored by the EU Research Fund for Coal and Steel to develop uniform European design rules for protected and unprotected cellular beams subjected to fire.

The test incorporated unprotected secondary cellular steel beams acting compositely with the supporting floor slab. The floorplate in its entirety was designed to carry the load with unprotected beams, when subjected to a severe fire, by utilizing membrane action of the floor slab. The overall structure performed very well supporting the full applied static load for the duration of the test. The unprotected cellular steel beams were subjected to distortional buckling, with only the top tee providing any support through catenary action.

Slab and cellular beams during the fire test

The test supported the assumptions adopted in the structural design approach and provided an accurate estimate of the strength of the floorplate. Comparison of the recorded time-temperature relationship of the fire with the design method presented in the Eurocodes shows that the code under-predicts the severity of the fire, although this was compensated to some extent by the conservative assumptions embedded within the structural model.

Project partners: Ulster University, Arcelor Mittal Luxembourg, Liege University, SCI, CITICM and ASD Westok Ltd.

Signed: Faris Ali, University of Ulster

News from WPI

Siemens Building Technologies Division has given Worcester Polytechnic Institute (WPI) $100,000 to support the construction of the school's Fire Protection Engineering Lab. In recognition of the gift, WPI has named the Fire Protection Engineering building's conference center after Siemens to honor its leading role in supporting the advancement of fire and smoke detection technology and its underlying scientific study.

"Siemens has long been a pioneer in the field of fire and smoke detection and Worcester Polytechnic Institute and the industry continues to benefit from the relationship we've maintained over the years," said Karen L. Bean Director of Development for WPI. "Our intent is to apply Siemens gift to expenses associated with the renovation of the Fire Protection Engineering Lab. To assure our leading role in academic development of fire protection engineers, we are recreating the learning environment to better serve students and faculty—Siemens generous support will go a long way to help us with our goals for the facility and for that we are truly grateful."

Siemens support is earmarked for the school's Fire Protection Engineering Lab, a facility that has been forwarding engineering and other advanced degrees, graduating fire protection engineers since 1979. Since the school's inception, WPI has matriculated 596 fire protection engineers, most now serving the industry directly and ensuring that America's buildings and their occupants are safer from fire-related emergencies.

Signed: Steven Kuehn, Siemens

News from IAWF

New IAWF President,

The board of the International Association of Wildland Fire (IAWF) just selected its new President, Dan W. Bailey.

IAWF is a professional association, which represents members of the wildland fire community, including fire-fighters, managers and researchers. IAWF produces Wildfire magazine, the International Journal of Wildland Fire, and FireNet as well as conferences and joint training opportunities.

Dan Bailey is succeeding Chuck Bushey. Chuck started to build bridges between the IAWF and the IAFSS through sponsoring a common conference (such as the 1st International Conference on Safety and Crisis Management in the Construction, Tourism and Small and Medium Enterprises sectors, Nicosia, Cyprus 24–28 June 2011) and he is still working on several initiatives to bring these two associations closers. We want to thank Chuck for his devoted and excellent work. We are sure that he will continue supporting common initiatives. We also want to welcome Dan, send him our best wishes for the important voluntary position he has accepted, and tell him that we are ready to work.

Signed: Albert Simeoni, WPI

FEATURED ARTICLE

Engineering Failure and Advanced Fire Engineering

by Vincent M. Brannigan J.D
University of Maryland College Park, USA

For many years the problem of fire safety was relatively simple so simple regulatory structures were developed to evaluate and approve fire safety in buildings. Even as buildings grew in size improvements in safety technology and private quality control assisted in the effort to create safer buildings. However over time, many technical regulatory systems have broken down due to limitations in technical, organizational and social knowledge. In the current environment massive structures are built in an almost unregulated environment. As in the case of the Titanic, the Hindenburg or even the electronic accounts of MF Global Holdings Ltd the public may have no idea of the hazard embedded in the technology until the disaster occurs. Root cause analysis after the disaster routinely shows a large number of different failures converging at a critical point in time. However a number of seemingly simple principles can be very useful in dealing with the root causes of technical failure. Awareness of these principles might help prevent the worst of the possible fire disasters.

Titanic sinking **by Willy Stöwer, 1912**
(photo wikipedia)

The first issue is the role of quantification and distribution of risk and benefits. The risk from any technological improvement may be disproportionate to the benefits and the risks may be borne by people distant from those who benefit. In addition, since knowledge of the risk and benefits is often unequally distributed, you can create a potent mixture of ignorance, greed and wishful thinking.

"Convenient assumptions" that eliminate safety precautions often allow developer's projects to go forward with minimal oversight. It is, after all the occupants who bear the risk. Tall buildings with single or inadequate staircases can be disasters waiting to happen.

When disasters do occur, politicians and developers normally have a "built-in" incentive to assign "human error" to the dead operators or end users or others who are outside the system design and approval process. In most fires finding someone to blame for the ignition shifts attention from the engineering failure to anticipate and guard against such ignition. Anticipating and guarding against failure takes very special expertise. In many cases expertise in the creation and use of technical systems does not routinely equate to expertise in the risk of the system. The analysis of the design risk of a system requires special attention from third parties not involved in the design especially when the feedback loops are very long.

Performance based designs often seem to ignore the reality that fires in structures involve an extremely dynamic interaction between structures, which are more or less regulated, and contents which are often entirely unregulated. We then add in people, who may be totally unpredictable in their reactions to future fires. The net result can be buildings built on convenient assumptions, outdated science, guesswork and naïve hope all masquerading as "Fire Engineering".

Federation Tower, **Europe's tallest-to-be building, on fire on April 3rd, 2012, Moscow**
(photo RIA Novosti / Iliya Pitalev)

A few simple reforms might help avoid engineering failure:

- **Abolish the Titanic defense**.
  It should be legally irrelevant in any disaster investigation whether the building "complied with the code" or had regulatory approval. The Titanic complied with all codes. Fooling regulators is easy and manipulating them is an industry. Lawyers can make any building legal, only engineers can make it safe. Unless the regulatory system clearly imposes strict responsibility for the structure on the design professional and owner/operator of the structure, with adequate mandatory insurance and strict liability there will be endless attempts to "pencil whip" designs to reduce cost at the price of increased risk to end users.

- **Insist on both Validation and Verification of all Regulatory Tests.**
  Validation means that the test is technically consistent and gives consistent answers. Verification means that the test is continuously meaningful in a variety of situations in the real world. In particular the test based methods for sampling the scenarios and setting the bounds on uncertainty must be validated for the particular application.

- **Set professionally valid ranges for allowed Engineering judgments.**
  Engineers should have to demonstrate that any and all assumptions, analysis or estimates used in any project fall in the ranges permitted by the discipline, not the regulator. Engineering judgment is properly limited to those areas where the specific engineering discipline has validated a methodology and data set adequate for a verifiably correct range of judgments. Engineering judgment takes place within that range. Where the judgment cannot be constrained by a suitable engineering methodology, political decisions on risk have to be made.

- **Leave guesstimates to the Politicians.**
  Guesswork does not become engineering judgment just because the guesswork is created by an engineer. Our society routinely makes technically informed political decisions. However, there is no requirement that such decisions be made in a form which accommodates fire engineering.

- **Require special proof of non engineering variables**.
  Fire Engineering has no special expertise in biology or human behavior. We use the output generated by other fields. Any claims to use data from those fields must be specially verified and validated by panels of well qualified experts from those domains before being used. Exactly who updates the fire use of "tenability" claims to keep abreast of knowledge in those fields?

- **Transparency is critical.**
  Until a technology is stable, every step of every approval should be as public as possible No "trade secrets" or secret approvals. Physicians many years ago declared secret remedies and secret operations unethical. There is no place for claims of "secret knowledge" about fire safety when it involves public health and safety.

- **Don't predict, -Regulate**.
  Many variables may be difficult to predict but may represent a very straightforward regulatory problem. The fire or human load of a building can be regulated. It may be possible to create binding contracts invoking third party regulators to keep the assumptions related to the variables within the bounds of the analysis. Such regulation should be part of the approval

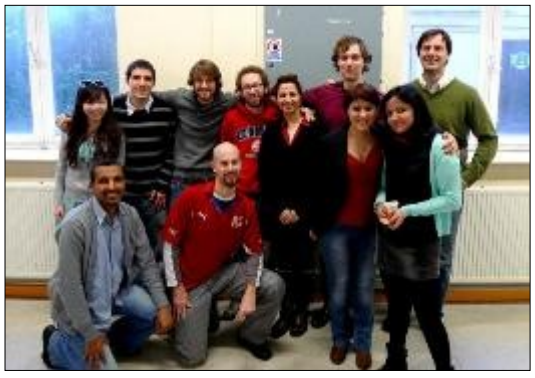
- **Bottom line** -
  We can advance Building Design and Fire Engineering only by designing out the risk of fire, not by shifting that risk to occupants or the society.

FEATURED ARTICLE

A student's perspective on Europe's new masters degree

By Nick Bartlett
2nd year IMFSE student

The selection of the International Master of Science in Fire Safety Engineering (IMFSE) program has been and likely will remain to be one of the best decisions in my career. With a background in fire safety product compliance testing in the US, my initial program considerations were heavily influenced by the quality and reputations of WPI, UMD, and Cal Poly. However the IMFSE program represented a bit of a wild-card choice, mainly due to my limited knowledge of the participating universities. Three-quarters of the way through the program, these initial doubts of mine have easily been quelled.



IMFSE students with Professor Jan De Saedeleer, Ghent, Legislation in Fire Safety

Due to the built-in mobility of the program, I believe I will receive a more well rounded of a skill-set than possible through any other individual university. This does not take into account the added value of seeing how fire safety engineering is approached in 3 unique and distinct frameworks. Each participating University has their own specialization within the field, and this is exploited in the program. At the University of Edinburgh, focus is on fire safety in a structural engineering context. Classes in finite element method and structural philosophy, among others, are taught. For the second semester at Lund University, focus is placed on risk assessment, human behavior, and enclosure fire dynamics. Projects included a full risk assessment of a hazardous chemical facility, a full-scale building evacuation and human behavior study, and a student designed and executed enclosure fire experiment with CFD validation. At Ghent University, with a more general focus, classes are taught in explosions, detection and suppression, smoke and heat control, passive fire protection, performance based design, and fire safety regulation. Projects included design of smoke and heat control systems for a supermarket and underground car park, and a performance based design of a multi-functional university space. Students also have the choice to conduct the culminating thesis at any of the three universities, allowing students to work with experts in their particular area of interest.

I believe the strength of the program also lies in the variety of delivery tools used. In Sweden, a visit to SP Research Institute, a fire door manufacturer, and fire brigade were arranged. In Ghent, trips were made to an explosion testing center, a fire testing laboratory, and a fire detection & suppression company. In Edinburgh, a firefighter training program was included. Moreover, the quality of teaching has surpassed my expectations. Jose Torero, Daniel Nilsson, Patrick van Hees, and Bart Merci are all phenomenal professors. However, it is not simply the professors, but the additional value and perspective added by bringing in external fire safety consultants to teach particular courses. Experts such as David Purser, Rita Fahy, and Phil Rubini all taught program segments.

Mention must be made to the incredible experience one gets simply from living in three different countries. The program is also truly international, with students from over 30 countries. In this context, an intense amount of learning takes place as a result of simple daily interactions with such a broad group of people. The global network created by a truly international group provides limitless opportunities in the future for collaboration and continued learning. I am excited to have such a group of well-trained fire safety engineers which I may now call friends, dispersed amongst all corners of the globe.

Students conducting a fire experiment in Lund

Finally, I must add that the scholarships available contributed to my decision, when also considering the price of education in the United States. Such scholarships make the program much more accessible, thus contributing to the student diversity.

ARTICLES

Fire tests on vehicles with electric and combustion engines

by Amandine Lecoco, Marie Bertana, Benjamin Truchot, and Guy Marlair, INERIS

To ensure the safe development of electromobility in France, the National Institute of Industrial Environment and Risks (INERIS) conducted fire tests on electric vehicles (EV) and on internal combustion engine (ICE) vehicles for two French car manufacturers. The main goals of these tests were to compare in case of an external fire in confined space the general behavior, the nature and the quantity of emitted gases and the heat released by lithium-ion powered electric vehicles and analogous ICE vehicles. Prior to vehicles fire tests at full scale, lithium-ion modules and full battery packs were burned and battery reaction with extinguishing water was studied.

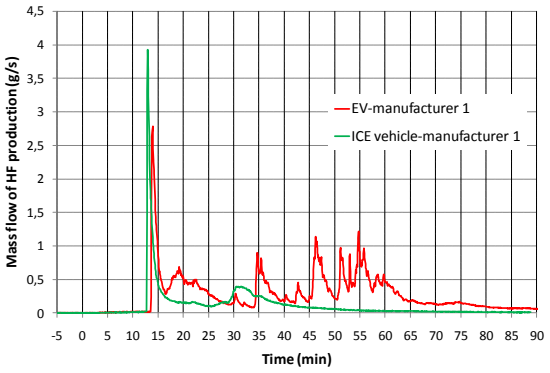
Full scale tests were performed in INERIS fire gallery tunnel. This facility dimensions are 50 m long, 3.5 m high, 2 m wide with 10 m high tower where the mains sensors are set up and fire gases are sampled. Gas flow rate was around 25000 m^3/h. The main online measured parameters were thermal flux, temperature inside and at the surface of the vehicles, smoke temperature and opacity, as well as gas analysis. Classical analytical methods such as non-dispersive infra-red spectroscopy for CO_2 and CO, paramagnetism measurement for O_2, chemiluminescence for nitrogen oxides (NO_x) and flame ionization detector for total hydrocarbons (THC) were used. An online Fourier-Transform Infra-Red spectrometer was also used for further analysis of gases and vapors including HF, HCl, HCN, etc. The fire was in all cases initiated inside the vehicle on left front seat by a gas burner.

Outside view of the fire gallery tunnel at INERIS

These tests highlighted several instructive results; some of them are detailed hereinafter. No explosion or projection related to the (lithium-ion based) battery was observed during the two EV fire tests. Related heat release rates and the effective heat of combustion were found to be similar to the ICE vehicle fires. For one car manufacturer, the maximum heat release rate for electric and ICE vehicles was in the range 4.2-4.8 MW and the total released energy 6300-6900 MJ. For the other car manufacturer, the maximum heat release rate for electric and ICE vehicles was in the range 4.7-6.1 MW and the total released energy was 8500-10000 MJ.

Full scale electric car fire experiment

Fire experiments showed the production of similar cumulative masses of C O_2, CO, THC, NO_x, HCl and HCN for both types of vehicles. A release of a significant quantity of HF was measured during both electric and ICE vehicles fire tests as shown in the graph below. It's worth noting that a significant emission of HF was measured during ICE vehicle fire experiments (green curves). A similar peak of HF emission at 14 min was observed during EV and ICE fire experiments. It may come from fluorinated materials (fluorinated thermoplastics and elastomers) contained in the vehicle. In the case of electric cars, additional HF emission peaks corresponding to the combustion of the lithium-ion battery pack were observed around 25-30 min after triggering vehicle fire (red curves). Consequently, HF cumulative mass was higher in the case of electric vehicles due to the combustion of lithium-ion battery pack.



Measured flow of HF gases released from two tests

Numerous parameters such as the battery technology, its packaging, its design and its position within the vehicle, the fire scenario initiating event, etc. are liable to play a significant role on the overall behavior of an electric vehicle exposed to an external fire. Thus, these results cannot be extrapolated to other vehicles or other car companies or even to all potential fire scenarios. Based on this study, modeling work aiming to predict toxic gases dispersion and thermal effects in confined spaces (underground car parks, tunnels, etc.) will be conducted.

Towards the Understanding of Extreme Wildland Fire Behavior

by Martin E. Alexander, University of Alberta

The power of extreme wildfire behavior has been vividly demonstrated in recent years with events such as the Black Saturday fires of February 7, 2009 in south-eastern Australia that resulted in 173 civilian fatalities, or the wildfire that descended upon the town of Slave Lake in central Alberta, Canada, on May 15, 2011, destroying a third of the residential properties and businesses. The ever increasing number of wildland-urban interface fires in recent years has blurred the distinction between urban and wildland fire behavior to a large degree.

Extreme fire behavior represents a level of fire activity that generally precludes any direct suppression action by conventional means (e.g., ground forces with or without mechanized equipment). Extreme fire behavior can occur on both small and large fires, and usually involves several of the following characteristics: very fast spread, high fireline intensities, large flames, active crowning, prolific spotting, large fire whirls, and well-established convection column.

It's common for fires exhibiting such phenomena to behave in an apparently erratic and dangerous manner.

The sudden escalation leading to extreme fire behavior have been responsible for the deaths of numerous firefighters and members of the general public over the years. Some 425 wildland firefighters have, for example, perished as a direct result of burnovers or entrapments in the United States since the "big blowup" of 1910 in northern Idaho and western Montana. Safe and effective fire control management is dependent to a large extent on the ability to predict fire behavior. Predictability is indeed difficult when it comes to anticipating extreme fire behavior, but not necessarily impossible. For example, the spread rate and intensity of crown fires in conifer forests can be estimated with reasonable accuracy on the basis of forecast weather conditions using existing models, although admittedly projecting a final forward distance is challenging. And while the preferred locations for fire whirl formation can be approximately known, given their stochastic nature predicting whether they will occur or the timing of occurrence cannot be achieved with any degree of certainty.

A great deal has come to be learned about extreme wildland fire behavior over the past 100 years or so as a result of operational experiences and both basic and applied fire research. Decision support tools and guidelines have gradually been refined with time. Still, our understanding of the physical processes involved remains rudimentary.

The Joint Fire Science Program (JFSP)recently funded a team of scientists to undertake a current state-of-our-knowledge review and synthesis of the science on the topic focusing on what we know and what we don't know. The first installment of that effort has now been published:

Werth, P.A.; Potter, B.E.; Clements, C.B.; Finney, M.A.; Goodrick, S.L.; Alexander, M.E.; Cruz, M.G.; Forthofer, J.M.; McAllister, S.S. 2011. ***Synthesis of knowledge of extreme fire behavior: Volume 1 for fire managers***.

USDA Forest Service. Pac. Northwest Res. Stn., Portland, OR. Gen. Tech. Rep. PNW-GTR-854. http://www.treesearch.fs.fed.us/pubs/39553

CONFERENCE REPORTS

Western States Combustion Institute, Riverside

The 2011 Fall Technical Meeting of the Western States Section of the Combustion Institute was held October 16 -18, 2011 at the University of California, Riverside. While most presentations at the conference focused on topics of combustion not related directly to fire science,

there was an active community in the field which presented their fire work. Notably, both the University of California, San Diego and San Diego State University had students presenting numerous works on flame spread and wire ignition. San Diego State University is developing two new flame spread apparatus, one for real-time experimental tracking of flame spread and another to simulate microgravity flame-spread conditions on earth. Prof. Williams of the University of California, San Diego also delivered a plenary lecture, entitled "Short chemical mechanisms in combustion". Discussions during the fire research section made this a productive meeting for collaboration.

Signed: Michael Gollner, University of California at San Diego

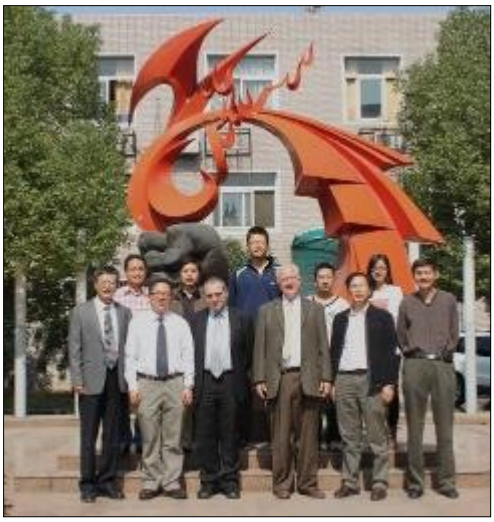
Workshop on Fires at high altitudes, Hefei

There are a number of situations when fires may occur at reduced ambient pressures and oxygen concentrations that are different from standard atmospheric conditions. In China, there are cities such as Lhasa and Xining where the atmospheric pressures are as low as 0.7 atm. The four major plateaus in China, including the Tibetan Plateau, Loess Plateau, Yungui Plateau and Mongolia Plateau, nearly occupy a quarter of land area of China.

Fires at high altitudes with the reduced ambient pressures have caused significant damage to communities and ancient buildings in China. However, little effort has been devoted to a fundamental understanding of fire behavior under low pressures, and there is a lack of quantitative knowledge on fire safety at high altitudes. In 2010, a national key project named "Study on thermophysical issues of fire protection under reduced ambient pressures and oxygen concentrations" was sponsored by National Natural Science Foundation of China.

In order to enhance the communication and promote the international collaboration, a workshop entitled "2011 International Forum on the Frontier of Plateau Fire Safety", was held at the State Key Laboratory of Fire Science (SKLFS), University of Science and Technology of China on October 17th, 2011.

The workshop was organized by Prof. Naian Liu (SKLFS/China) and Dr. Yaping He (University of Western Sydney/Australia). Prof Bogdan Dlugogorski (Chairman of IAFSS, University of Newcastle/Australia), Dr. John de Ris (FM Global/USA), Dr Yaping He (University of Western Sydney/Australia) and members of the above noted project participated in the workshop.



Participants of the International Forum on the Frontier of Plateau Fire Safety

The goal of the workshop was to open a dialogue to discuss new research collaborations in an effort to study the high altitude fires and to get more detailed mechanisms of fire dynamics at different altitudes. Twelve presentations were delivered to focus on the effect of the ambient pressure on physical and chemical mechanisms in fire. The detailed topics included: the effect of pressure on material burning behaviors; fire dynamics under different altitudes; fire engineering for high altitude areas; international collaboration in plateau fire safety research.

The workshop was considered a success and was intended to be the first step to promote the international cooperation by a diverse group of researches for the fundamental researches of fire safety in high altitude areas.

Signed by: Prof. Naian Liu and Prof. Lizhong Yang, University of Science and Technology of China

Workshop on human behavior, Santander

Over 150 people attended the Advanced Research Workshop "Evacuation and Human Behavior in Emergency Situations" held at University of Cantabria (Santander, Spain) on 21st October, 2011 Evac2011 was organized by GIDAI Group in collaboration with University of Maryland, University of California at Berkeley, University of Canterbury, IAFSS, SFPE and NFPA.

The call for papers received 30 abstracts (from different 20 countries), and the Scientific Committee selected 20 papers for presentation in the two oral sessions.

The papers addressed different aspects of evacuation processes and human factor in emergency situations.

The Invited Lecturer was delivered by Prof. David A. Purser from Harford Environmental Research, UK with titled "Design Behavioral Scenarios for Escape Behavior Modeling in Tunnels and Underground Complexes". Prof. Purser, who has worked for over 35 years on fire toxicity and human evacuation behavior, talked about the importance of the RSET concept (Required Safe Escape Time). Traditionally, this is assumed to be the sum of the detection time and evacuation time. Through the analysis of paradigmatic real cases such as the Mont Blanc Tunnel fire and the King´s Cross fire, Prof. Purser showed the importance of including additional time delays such as staff response, staff communications, emergency identification and alarm activation.

For more information and the videos of the presentations, visit http://www.gidai.unican.es.

Signed: Mariano Lázaro, Universidad de Cantabria

Global Tunneling Forum, Madrid

The latest Global Tunneling Forum was held in the Hotel Puerta, Madrid on the 1st and 2nd of November, 2011.

About 15 papers were presented from experts attending from around the world. The topics varied from the last advances in geothecnics and tunnelling engineering, to aerodynamics, fire safety and risk analysis challenges in tunnel design.

Miguel Fernandez-Bollo (vice-president of the Spanish Association of Tunnels and Underground Works – AETOS) chaired the 2nd day activities and presented an overview of the state of the tunnelling industry in Spain and the future developments and opportunities across the country.

Specific Fire Safety and Risk matters have been discussed by Michael Francis (Motts McDonnald) with an extensive description of the benefit of a risk assessment from the concept design to the final project stages. Gabriele Vigne (Arup Fire) presented challenges in the ventilation design showing iconic projects where advanced fire modelling have been integrated to aerodynamics modelling. Felipe Herrera (Arup Fire) presented a novel methodology to determine Design Objectives and Performance Requirements for Structural Fire Protection in tunnels based on risk analyses, fire engineering and structural fire engineering.

The conference was closed with a great example of how Fire Safety Engineering has been a vital design input for a very important European infrastructure project. Kim Andersen presented the Femern Belt tunnel, a story of successful holistic design and planning where Fire Engineering and especially smoke ventilation design have been key design factors at the time of deciding to connect Denmark with Germany and the rest of continental Europe via a 18km immersed tunnel instead of linking them with a bridge.

Signed: Gabriele Vigne, Arup Madrid

Fire Safe Use of Wood network, Stockholm

The 7th and 8th of November 2011 saw the revival of the Fire Safe Use of Wood (FSUW) network at a meeting hosted by SP Trätek in Stockholm. The network first started in 2002 as a result of an initiative from Finland and Sweden and has representatives from both industry and research in about 15 European countries. Previous work by the group led to the recent FireInTimber project which resulted in the European technical guideline 'Fire Safety in Timber Buildings' published by SP in 2010 – this is however only a starting point for harmonization within Europe.

Participants of the Fire Safe Use of Wood meeting in Stockholm in November 2011

The meeting saw 26 representatives of 23 organizations in 13 countries. Day one of the meeting was an opportunity for representatives to describe the current state of regulation with regards to timber buildings. Speakers were invited to discuss any national obstacles to the use of timber in buildings as well as any recent or planned changes in national regulations. Each presentation was followed by discussions trying to identify potential opportunities for increasing the use of timber and wood in buildings.

During the meeting, a number of issues were highlighted, three of which are summarized here. 1) It appears that the majority of incidents occur during the construction phase of timber buildings, which has led to new insurance and fire safety consideration. 2) There is a drive for increased use of timber in high rise buildings

–use of timber in multi-storey frames rise above 15% in some countries during 2011. Feasibility studies of timber buildings as high as 20-storey have been undertaken. 3) There is currently a wide disparity in national regulations and insurance requirements throughout Europe and this hinders the use of wood on a scale equivalent to concrete and steel.

As well as national representation, there was also an opportunity for industrial members to share their views on EU research and standardization. Some of the topics touched upon included: fire safety design; durability; test methods and external cladding construction.

The meeting concluded with discussion in two breakout groups on the topics of modeling of timber in fires, naturally occurring insulation materials and fire safe use of timber in buildings.

Ultimately it is hoped that the group will contribute to harmonization of the use of timber and naturally occurring insulation materials in buildings throughout Europe.

Signed: Birgit Östman, SP

The Science of Suppression FIRESEAT symposium

On November 9th, 2011 the students from the International Masters of Science in Fire Safety Engineering (IMFSE) studying in Edinburgh University were invited to attend the 5th FIRESEAT symposium "The Science of Suppression". During this conference, attended by ~85 people, we saw eight different speakers from varying parts of the world discussing topics focus around fire suppression.

The first speaker we had the privilege of seeing was Ronald Alpert. As the Alpert Correlations were among the topics covered in our Fire Dynamics course, we were all excited to hear him speak. Alpert explained how he designed his correlations and revisited them with new experiments. He eagerly stressed his excitement for someone to advance his correlations past the current level in which they are.

The next speaker was Yibing Xin of FM Global. Sprinkler technology was the topic discussed. FM Global is working on being able to affectively model how sprinkler systems work during suppression. By doing so, they are creating a new modeling tool, FireFOAM. This would be a very useful tool because of the expensive costs of having full-scale burns. We recognize the challenges faced in order to create a program such as this, although there is no doubt that it would be a great use to the Fire Protection Community.

Andre Marshall from the University of Maryland was the third speaker of FireSeat. The research Marshall is conducting also focuses around sprinklers. In contrast to Yibing, his research involves quantitatively breaking down the spray pattern of a sprinkler head and analyzing it. The techniques being used by Marshall are nothing short of impressive.

FireSeat at this point made a turn toward the use of water mist sprinkler systems. Louise Jackman of LPCB discussed some research she was conducting. This involved using mist systems in different setting with different variables. All we could conclude from this was that mist systems are temperamental, in which the system requires just the right variables to effectively work.

The next speaker was Stefan Kratzmeir of IFAB. He discussed his research involving the use of water mist systems in tunnels, and how it could be effective in mitigating a fire. Our concern with this topic was the interaction between the mist and the ventilation. We felt this concern was not addressed.

The next research area discussed was the use of cryogenic suppression, presented by Michael Delichatsios of the University of Ulster. He explained the used of cryogenic material (mainly liquid nitrogen) to extinguish pool fires and wood crib fires. Although the method was effective, the delivering of the agent to the seat of the fire seems to remain the issue in which water and foam systems still have over such a suppression agent.

Suppression in tunnels again arose with the next speaker, Elizabeth Blanchard. Her modelling results of fire suppression inside a medium size tunnel seemed to be more accurate than previous studies. But the question already began to loom among our students concerning the interaction between the mist delivered and ventilation. Our concern was again not addressed, despite the effectiveness of the mist system to mitigate fire and enhance visibility, we felt more research should be performed to address the issue.

The final speaker of the 2011 FireSeat was Stefano Chiti of COWI. This research involved using hypoxic air for fire suppression and prevention. This would basically displace oxygen in the combustion process making combustion slow or near impossible to occur. This is a good research area, especially since Halon is no longer being used. We can see the use of this being great as long as it is ensured not to affect human life.

FireSeat was a great experience. It showed suppression research has many different areas that will improve the suppression actions of the Fire Protection Community in the future.

Signed: Joshua Reichert and Oriol Rios, 1st year IMFSE students

Workshop on localized fires, Borås

On the 16th of December SP Fire Technology held a special workshop on localized fires at their large hall in Borås, Sweden. The workshop was designed around experiments which were devised to characterize the thermal exposure levels by radiation and convection of a steel column surrounded by liquid pool fires by measurements with thermocouples, heat flux meters and plate thermometers. Participants were invited from both industry and academia to witness the fire tests and to discuss the results of the tests all on the same day.

Pool fire test on a steel column at SP

Four experiments were performed with two alternative pool diameters. Methanol, diesel, and heptane were run with a pool diameter of 1.1 m, and a diesel fire was run with a pool diameter of 1.9 m. The column was 6m in height and 0.2 m in diameter. The steel temperature was monitored and in the gas phase around the column temperature was measured with thin (0.25 mm) welded thermocouples. In addition standard plate thermometers according to ISO 834 and EN 1363-1 were used to register the combined thermal exposure of incident radiation and gas temperature.

The results will be presented at the 7th International Conference on Structures in Fire in Zürich this June. The data will also be available for public download from the SP website shortly.

Signed: Ulf Wickström, Johan Sjöstrom, David Lange, SP and Alexandra Byström Luleå Technical University

Cyprus Safety Platform and 1st One Day Workshop

The launch of the Cyprus Safety Platform took place on Wednesday 22nd February 2012 in the Cultural Center of European University Cyprus, Nicosia. It is supported by many government departments, national engineering bodies, and trade unions, as well as professionals and business owners who also took part in the launch and the open discussion that followed.

On Behalf of the Board of the Platform, Dr George Boustras, Director of the Centre for Risk, Safety and the Environment (CERISE) explained that aims of the Platform are based on promotion of research on safety, communication between social and professional bodies, transfer of research knowledge and promotion of a safety culture in the society. Among the aims of the Cyprus Safety Platform will be to create the agenda for safety in Cyprus for the years to come.

Another major aim of the Platform is to organize Workshops in order to bring together safety academics and practitioners as well as disseminate crucial knowledge to the public. The 1st One Day Workshop focused on Critical Infrastructure Protection. The Keynote Speech "Critical Infrastructure Protection Overview" was given by Prof George Hadjisophocleous, Carleton University Canada.

Signed: George Boustras, CERISE, European University of Cyprus

CALL FOR PAPERS

FM Global Open Source CFD Workshop

The 4th FM Global Open Source CFD Fire Modeling Workshop will be held at the Four Points Hotel and Conference Center by Sheraton, in Norwood, MA, USA, on May 17-18, 2012. Prospective participants of the workshop are invited to register their interest and submit a ½-page abstract of their proposed presentation by April 9, 2012 using the following website: http://sites.google.com/site/firemodelingworkshop/8-signup. The abstracts will be evaluated based on their suitability for the objectives of the workshop and the authors will be notified of the acceptance of the presentation by April 16, 2012.

Invitations to attend the workshop without presentation will be extended on the basis of available space. There will be no registration fee for the workshop. Invited participants are responsible for their own travel and accommodations. A block of rooms will be reserved at discount rates at the Four Points Hotel and Conference Center by Sheraton, in Norwood, MA, USA and the participants will be informed on the reservation details by April 14, 2012.

Further information about this as well as past workshops can be found at http://sites.google.com/site/firemodelingworkshop/home

9th Asia-Oceania Symposium on Fire Science and Technology, Hefei

A Call for Papers has been issued for the 9th Asia-Oceania Symposium on Fire Science & Technology (AOSFST), which will be held 17-20 October 2012, Hefei, China. This symposium is held by the Asia-Oceania Association for Fire Science and Technology (AOAFST) which is under the International Association for Fire Safety Science (IAFSS). The 9th AOSFST will be hosted by State Key Laboratory of Fire Science (SKLFS) at the University of Science and Technology of China (USTC).

The 9th AOSFST will include invited lectures from the world's top fire science researchers and presentations of peer-reviewed papers. All accepted and presented papers will be included in the symposium proceedings, which will be published electronically by the journal of Procedia Engineering, on the Elsevier ScienceDirect system. All papers are expected to be indexed by Scopus and EI Compendex.

Full papers should be submitted electronically, beginning 20 March 2012 through the Login button on the homepage of the symposium website (http://aosfst.csp.escience.cn/). The submission deadline for papers is 30 April 2012. The submission deadline for poster abstracts is 30 May 2012. Full papers and poster abstracts will be reviewed by the Technical Committee. The following topics will be included: Fire physics and Chemistry; Fire and Smoke modeling; Human-fire interactions; Fire statistics and risk assessment; Fire safety design and code; Structure response to fire; Fire properties and testing methods of materials; Suppression, Detection, and Smoke Management; Urban, WUI, Forest fires; Special topics (fire investigation, fire reconstruction, fire service needs, transportation fires, industrial fires)

In addition to the technical sessions, several social activities are planned to provide opportunities for participants to meet with other colleagues and friends from around the world. The four-day symposium is a good platform for all of us who are interested in fire science and technology to share our new ideas and recent research findings. It is our goal to make this symposium both enjoyable and informative for everyone.

Hefei is the capital city of Anhui province of China. It is an ancient city over 2000 years old with historic and cultural landscapes located at the shore of Chaohu Lake, one of the five largest freshwater lakes in China. It was awarded "Best Case City in Urban Competitiveness" in 2010 and "Top 10 Happiest Cities in China" in 2011. It is a lovely and attractive place to visit. There are also many famous landmarks in Anhui Province, including Yellow Mountain, the most beautiful mountain in China, ,and Jiuhua Mountain, one of the four sacred mountains of Chinese Buddhism. Moreover, the local opera (Huangmei opera) and culinary enjoyments shouldn't be missed.

For more information, please visit the web site http://aosfst.csp.escience.cn, or contact Symposium Secretariat, Dr. Jie Ji at aosfst2012@ustc.edu.cn.

Signed: Naian Liu,University of Science and Technology of China and Wanki Chow, AOAFST

Performance-based fire safety engineering of structures, Hong-Kong

Both performance-based structural engineering and life-cycle structural engineering are important areas of structural engineering research and have been gaining increased acceptance in structural engineering practice. The PLSE (next Hong Kong, 5-7 December 2012) conference series has been launched to provide an international forum for scientific exchanges in both areas and their interaction. In particular, performance-based life-cycle structural engineering, based on a full integration of the two areas, offers an exciting new direction for structural engineering within the context of sustainable urban development.

Despite its inherent conservatism, structural engineering in the 21st century has evolved into a highly scientific art underpinned by the laws of mechanics and mathematics and armed with an expanding array of impressive technologies in its command. In recognition of these developments there is a move towards loosening the straitjacket of codes and standards enabling greater flexibility and encouraging greater creativity. The modern Eurocodes have been one of the first international building codes to allow engineers to demonstrate "safety" using "alternative means" based on "first principles" and advanced "calculation procedures", whilst also maintaining the more "prescriptive" traditional approaches. Prescriptive approaches remain prevalent in structural fire engineering industry despite the general acceptance that these are flawed in many ways. They are typically based upon highly idealized and often "out of context" testing and experience. This mini-symposium will explore new ideas on performance based approaches applied to structural fire resistance.

The symposium will take place over two sessions of the conference and papers are now solicited for inclusion in the conference. Presenters at the mini-symposium are entitled to a waiver of 20% of the conference registration fee. A special issue of the Proceedings of the Institution of Civil Engineers - Structures and Buildings will also be published to coincide with this

symposium and articles presented at the symposium will be invited for submission to the special issue.

The organizers of the mini-symposium are Professor Asif Usmani, University of Edinburgh and Dr David Lange, SP Fire technology in Sweden. A special website for the mini-symposium has been set up at http://www.eng.ed.ac.uk/fire/performance

Deadline for paper submissions is the 1st of August 2012.

New Journal: Fire Science Reviews (Open Access)

Fire Science Reviews (FSR) is Springer's new online, open access journal dedicated to review papers in all aspects of fire safety science. FSR is an open-access journal, which ensures that any published research will remain freely available online to all readers. Authors benefit from unlimited distribution of the work. Fire Science Reviews is a part of SpringerOpen, Springer's new suite (60 and growing) of open access journals which will cover all disciplines.

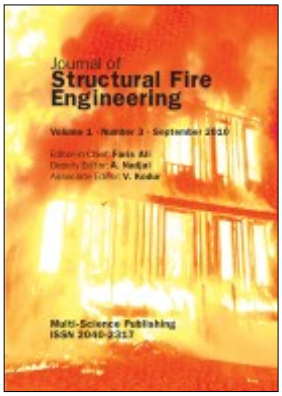
As a review journal, FSR provides a unique forum for synthesizing accumulated work, and for framing this work into a coherent view of the scientific discipline of fire safety science. Publication of review papers will occur on a rolling basis with the goal of publishing review papers within three months of submission. Publication will begin in early 2012.

Potential authors are encouraged to contact Editor-in-Chief Craig Beyler at editorial@firesciencereviews.com. FSR will work with potential authors from the concept stage to final publication. A minimum of three peer reviewers will be used, who will be involved with the authors as early in the paper development process as possible.

Fire Science Reviews aims to actively consolidate advancements in the field, in order to foster growth within the discipline, thereby establishing a platform for new investigation. Our secondary goal is to encourage the use of science in improving fire safety in real-world industrial, corporate, and government settings. http://www.firesciencereviews.com

Journal of Structural Fire Engineering

Journal of Structural Fire Engineering is the first peer reviewed research journal specializing in structures performance in fire and is entering its third year in 2012. During the last two years the journal has made a confident and stable progress by publishing the latest advanced research in the field and maintaining high standards.



The journal has launched recently special issues of the best selected papers of the SIF'10 conference held in Michigan in June 2010. The Journal has also sponsored the international Workshop on Fire Safety and Management (IWFSEM'2011) held in Muscat, Oman between 7-9 March 2011.

http://www.multi-science.co.uk/jsfe.htm

UPCOMING EVENTS

8th Global Congress on Process Safety, Houston, Texas April 1-4, 2012. Including Loss Prevention Symposium, CCPS International Conference, and Process Plant Safety Symposium. http://www.aiche.org/conferences/specialty/gcps.aspx

School for Young Researchers in Fire Engineering, 11-13 Apr 2012, Malta. http://fire.fsv.cvut.cz/ifer

Fire Safety Day 2012 Technical University of Denmark and Lund University, Lund, Sweden. Apr 18, 2012, http://www.brand.lth.se

3rd Human Dimensions of Wildland Fire Conference, Seattle, Washington, USA, Apr 17-19, 2012. http://www.iawfonline.org

26th Fire Science & Fire Investigation, CPD Course, University of Edinburgh, 16-19 Apr 2012. IFE examination on 20 Apr 2012. http://www.lifelong.ed.ac.uk/fire

Spring Meeting Central States Section of the Combustion Institute, Dayton, Ohio, USA, Apr 22-24, 2012. http://www.cssci.org

US National Symposium on Model Performance in Fire Prevention, Reston, Virginia May 4-6, 2012. http://www.strategicfire.org

7th conference Wood and Fire Safety on 13-16 May 2012, High Tatras, Slovakia. http://www.wfs2012.sk

4th FM Global Open Source CFD Fire Modeling Workshop, Norwood, MA, USA, on May 17-18, 2012. http://sites.google.com/site/firemodelingworkshop.

Airbourne particulate matter - generation, measured and impact, Spring meeting of the Combustion Group, Institute of Physics, 29 May 2012, London

7th International Conference on Structures in Fire (SiF), Zurich, Switzerland, Jun 6-8, 2012. http://www.sif2012.ethz.ch

6th International Conference on Pedestrian and Evacuation Dynamics, Zurich, Switzerland, Jun 6-8, 2012. http://www.ped2012.org

9th International Conference on Performance-Based Codes and Fire Safety Design Methods, Hong Kong, Jun 20-22, 2012. http://www.sfpe.org

CEFRC Summer School on Combustion, Jun 24 – 29, 2012, Princeton. http://www.princeton.edu/cefrc

Global Research Update: High Challenge Storage Protection, NFPA, Paris, France, Jun 27, 2012. http://www.nfpa.org/displayContent.asp?categoryID=2334

9th International Symposium of Hazards, Prevention and Mitigation of Industrial Explosions (9th ISHPMIE), Cracow, Jul 22 and 27, 2012. http://www.ishpmie.gig.eu/eng/a865

34th International Symposium on Combustion, Warsaw University of Technology, Poland, Jul 29-Aug 3, 2012. http://www.combustion2012.itc.pw.edu.pl

2nd International Conference on Fires in Vehicles (FIVE), Chicago, USA, Sep 27-28, 2012. http://www.firesinvehicles.com

5th International Symposium on Human Behaviour in Fire, Cambridge, UK, Sep 19-21, 2012. http://www.interscience comms.co.uk

2012 SFPE Annual Meeting: Professional Development Conference and Exposition. Oct 14-19, 2012, Savannah, USA. Deadline for submission is Mar 30, 2012. http://www.sfpe.org

2012 International Symposium on Fire Investigation Science and Technology (IFSI), Maryland, USA, Oct 15-17, 2012. http://www.isficonference.com

Asia-Oceania Symposium on Fire Science and Technology by AOAFST, Hefei, China, Oct 17-20, 2012. Submission deadline 30 Apr. http://aosfst.csp.escience.cn

International Congress on Fire Computer Modeling, Santander, Oct, 18 - 19, 2012. Deadline for submissions Jun 26. http://www.fcm2012.unican.es

Mini-symposium on Performance-based Fire Safety Engineering of Structures, 1st International Conference on Performance Based and Life Cycle Structural Engineering, Hong Kong, 5-7 Dec 2012. http://www.eng.ed.ac.uk/fire/performance

2013
Fire and Materials conference, Jan 28 -30, 2013, San Francisco, USA. http://www.interscience comms.co.uk

4th Fire Behavior and Fuels Conference, International Association of Wildland Fire and International Association for Fire Safety Science, Feb 18 -22, 2013, Raleigh, North Carolina, and Jul 1 -4, 2013, St. Petersburg, Russia. http://www.iawfonline.org/2013FuelsConference

Application of Structural Fire Engineering Conference, 19-20 Apr 2013, Prague. http://fire.fsv.cvut.cz/ifer

13th Interflam - International Conference and Exhibition on Fire Science and Engineering Jun 24 -26, 2013, London, UK. Submission deadline Nov 1 2012. http://www.interscience comms.co.uk

6th European Combustion Meeting (ECM2013), Lund, Sweden, Jun 25-28, 2013. Submitted deadline Oct 1, 2012. http://www.ecm2013.lth.se

2013 Eurofire conference, Basel, Switzerland, Oct, 2013. http://www.eurofireconference.com

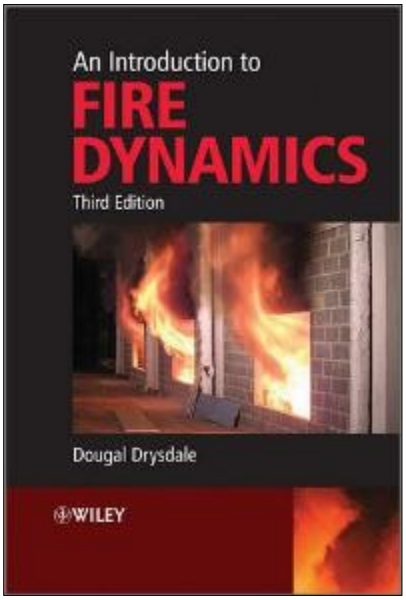
2014
11th International Symposium 2014, New Zealand

NEW PUBLICATIONS:

3rd Ed Introduction to Fire Dynamics

After 25 years as a bestseller, Dougal Drysdale's classic introduction has been brought up-to-date and expanded to incorporate the latest research and experimental data. Homework problems are included, with solutions, and others are available on the accompanying website at www.wiley.com/go/drysdale.

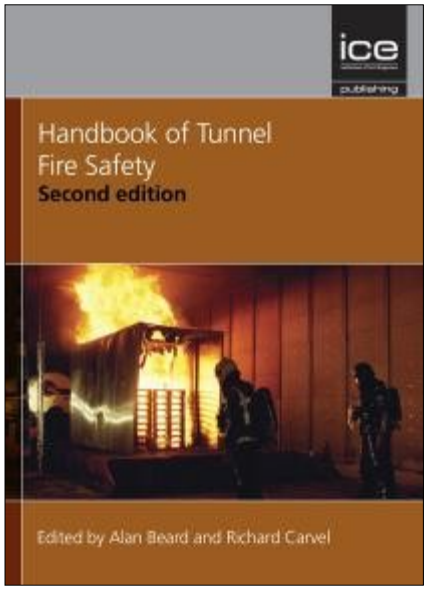
Essential reading for all involved in the field from undergraduate and postgraduate students to practising fire safety engineers and fire prevention officers, An Introduction to Fire Dynamics is unique in that it addresses the fundamentals of fire science and fire dynamics, thus providing the scientific background necessary for the development of fire safety engineering as a professional discipline.



3rd Ed of Drysdale's *Introduction to Fire Dynamics.*

2nd Ed Handbook of Tunnel Fire Safety

The Second Edition of the "Handbook of Tunnel Fire Safety" by Alan Beard and Richard Carvel was published by ICE Publishing in November 2011. The first edition of the book (2005) is widely acknowledged in the tunnel safety industry as the essential reference on all aspects of fire safety in tunnels.



Almost all chapters in the original edition have been thoroughly revised and updated for the new edition, and ten new chapters have been added, covering subjects such as suppression systems, heat release rate, egress behavior, legal aspects, 1D & multi -scale modeling, the Burnley Tunnel fire incident and the UPTUN project. ISBN 978-0-7277-4153-0. http://tinyurl.com/tunnelfire

Signed: Ricky Carvel. University of Edinburgh

Wildfire Accidents in Europe

A report about extreme fires was published in 2009 by the Joint Research Centre (European Commission). The report is titled: "Recent Forest Fire Related Accidents in Europe" and was edited by Professor Domingos X. Viegas.

The report presented a collection of field studies about accidents involving loss of lives in Europe. Only in Portugal, Spain, France, Greece and Croatia, around 500 people lost their lives in wildfire-related incident during the 1982-2007 period. The aim of the report is to disseminate the current knowledge about the causes of these accidents to the people fighting the fires in order increase their awareness. As stated in the introduction: "An entrapment is usually the result of an interaction between human behavior and fire behavior both of which require our attention and better understanding." Many authors contributed to the different chapters of this book through their research and study of each case.

Cover of Recent Forest Fire Related Accidents in Europe, by the European Commission.

Digital copies are freely available at http://effis.jrc.ec.europa.eu/reports/effis-related-publications

Signed: Albert Simeoni. WPI

Lithium Ion Battery Storage Hazard

In 2011, The Fire Protection Research Foundation's Property Insurance Research Group initiated a study of the hazards associated with lithium ion battery storage, with an aim of developing fire protection strategies to mitigate loss associated with fire incidence with these batteries in bulk storage and distribution, alone and in manufactured products. The overall aim is to develop the technical basis for requirements in NFPA and other standards which prescribe protection requirements.

The first phase of the project, conducted by Exponent, Inc., was a literature review of battery technology, failure modes and events, usage, codes and standards, and a hazard assessment during the life cycle of storage and distribution. It lays out a research approach toward evaluating appropriate facility fire protection strategies.

JOBS

Senior Research Scientist, FM Global, Massachusetts, USA

The purpose of this position is to develop new scientific knowledge, engineering technologies, and engineering solutions to problems in fire protection and fire dynamics, which can be used and applied by FM Global for the prevention or control of industrial property loss.

The primary responsibility of the position in FM Global is to plan, conduct, and communicate results of research projects in support of the critical business needs of FM Global. The position is expected to function as part of a dynamic team of scientists to develop and validate physics-based, practical models of fire growth and fire suppression as related to industrial and commercial fire scenarios. Key areas of research include Computer Fluid Dynamic (CFD) modeling of fluid mechanics associated with flow generated by fires, soot formation and oxidation, radiation transport, material pyrolysis, sprinkler sprays, spray/water transport and fire suppression. The model development will be closely integrated with experimental and theoretical studies of fire dynamics and fire suppression within the work group.

The position is responsible for technically outstanding work as well as all aspects of project management including project proposals, budget, and reporting. In addition, the position is responsible for communicating and transferring research results for practical use within FM Global and, as appropriate, to outside organizations including the scientific/engineering communities and standards organizations. The position also acts as a consultant to FM Global business units such as Engineering, Approvals, and Underwriting, as well as to insured clients. The position requires a PhD in Mechanical, Chemical Engineering, or related fields with a strong fundamental background in combustion, fluid mechanics, heat transfer, and applied mathematics. Advanced experience in numerical methods associated with combustion/fire research and an understanding ofexperimental methods in thermal fluids, combustion and/or fire is required. Excellent written and verbal communication skills, as well as demonstrated history of strong team performance is also required.

Contact: Sergey B. Dorofeev, Research Area Director, Fire Hazards and Protection, FM Global, 1151 Boston-Providence Highway, Norwood, MA 02062,
e-mail: sergey.dorofeev@fmglobal.com

Postdoctoral position in fire toxicity, University of Newcastle, Australia

The University of Newcastle, Australia, has an opening for a postdoctoral researchers in the field of PCDD/F formation in fire and non-fire processes. The position will also involve quantization of Polychlorinated dibenzo-p-dioxin and polychlorinated dibenzofuran (PCDD/F) emissions using an ion trap MS/MS spectrometer. If you are interested and have background in physical or analytical chemistry or a cognate discipline, and good track record of publications.

Send your CV to Professor Bogdan Dlugogorski (Bogdan.Dlugogorski@newcastle.edu.au).

Research Structural Engineering Positions, NIST, USA

The National Fire Research Laboratory (NFRL) at NIST anticipates two immediate position openings for research structural engineers with experience in large-scale structural experimentation and a background in steel or concrete design and construction. The research structural engineers will play a critical role in building a vibrant experimentally-driven research program on fire resistance of real-scale structures using the NFRL, a unique experimental facility nearing completion on the NIST Gaithersburg, MD campus. The research structural engineers will lead NIST's efforts in conceiving, safely conducting, and reporting on real-scale experimental research on steel, concrete, and composite (steel and concrete) structures exposed to simultaneous fire conditions and mechanical loads.

The engineers will join NIST's world-class research team in Fire Science and Structural Performance under Multi-hazards. They will develop national and international collaborations and will actively participate in the development of relevant standards and codes, enabling a transformation to performance-based fire resistance design of concrete and steel structures. The research engineers will lead the development of an experimental database on the fire performance of large-scale structural connections, components, subassemblies, and systems, which will be used to validate physics-based models of structural fire performance and to foster innovation in design and construction.

Additional information on the NFRL and fire research at NIST can be found at the following website: http://www.nist.gov/el/fire_research/nfrl.cfm

Applicants must officially apply for the positions online at www.usajobs.gov. U.S. citizenship is required for employment at NIST. The Department of Commerce is an Equal Opportunity Employer. There are other mechanisms for non-US citizens to work at NFRL and NIST. Please contact Jiann Yang for further information. (Jiann.Yang@NIST.gov).

PhD Studentship in Egress Modeling, University of Cantabria, Spain

The GIDAI Group- Fire Safety Research and Technology at the University of Cantabria has started a new research project on evacuation modeling in passenger trains. For this, the GIDAI Group is recruiting a PhD student to undertake this project over the next three years. The salary will be linked to Spanish official grants for PhD students. The successful candidate will have experience in egress modeling techniques (with experience in developing technical software), a good academic record and knowledge on fire safety engineering. Experience of using different egress models would be considered an advantage. The successful candidate must have excellent written and oral skills in English. We will be pleased to consider students with their own grant as well.

For more information, see http://www.gidai.unican.es and contact Prof. Daniel Alvear at alveard@unican.es.

OBITUARIES

Nora Helen Jason

Of Gaithersburg, MD, retired director of Fire Research Information Services at the National Institute of Standards and Technology passed away on January 23, 2012 as the result of complications from a perforated gastric ulcer. Ms. Jason was born in Schenectady, NY.

Source: www.legacy.com. Published in The Washington Post, February 26, 2012

Nora's recent article in *Fire Technology* "**inFIRE Revisited**" (dx.doi.org/10.1007/s10694-010-0163-z) was freely accessible online by everyone (Open Access) from Feb 1st to April 1st as a token memorial.

Signed: Jack Watts, Editor of Fire Technology

After receiving her master's degree, Nora accepted a position as cataloger, Sacramento State College, California. Areas of responsibility were: music, American history, psychology.

In 1967 she was selected as an Administrative Librarian with the Special Services Libraries, Germany. Two medium sized libraries in the Stuttgart area serving the service men and women and dependents provided managerial challenges with the American and German staff, library collection building, public relations, and programs for the troops, including non-reading adults.

In 1969 Ms. Jason was promoted to Head Librarian, Special Services Libraries at McGraw Kaserne (Munich), Hospital Library and Dachau Library. With an Assistant Librarian and Larger staff it was possible to offer many more of the same activities except for a more diverse user population which also included University of Maryland students and retirees.

In 1971 Ms. Jason joined the Office of Fire Research and Safety staff to build a fire safety database for the National Aeronautics and Space Administration, Aerospace Safety Research and Data Institute (ASRDI). In a short time she was made the ASRDI Project Leader and successfully built the database which is now part of NASA RECON (their bibliographic database). The NASA work stimulated the beginning of the Fire Research Information Services and the building of the fire research collection. The collection has grown from zero to over 60,000 items during this time period. Access to the collection has been automated and national and international users can access the database, FIREDOC, from their home or office via modem, Web or Internet. FIREDOC contains the bibliographic reference, keywords, identifiers and (where possible) abstracts to the items in the collection.

In her capacity as Supervisor of the Fire Research Information Services, Ms. Jason has established national and international document exchange programs with her counterparts. As one of the driving forces of inFIRE (international network of Fire Information and Reference Exchange) she has been instrumental in developing products, e.g., a Union List of Serials, for use by the fire information community. Special projects also have been done for government agencies; for example, NASA, Minerals Management Service. Ms. Jason was an observer at the Federal Pre-White House Conference on Libraries and Information Services held at the National Library of Medicine in November 1990 and the White House Conference on Libraries and Information Service, 1991. Ms. Jason was awarded the US Department of Commerce Bronze Medal in 1977 and 1999. She was awarded the Society of Fire Protection Engineers Director's Award for the 1992 Outstanding Committee Chair, as the Chair of the inFIRE Advisory Committee. She is a member of the Special Libraries Association, inFIRE, and the Textile Information Users Council.

As a Guest Researcher, Ms. Jason was the Associated Editor of FIRE.GOV. It is an electronic newsletter for the fire service worldwide, bringing news of current international research to them. Technical reports, photographs, videos, and websites provide greater insight to the reader.

Source: NIST http://www.nist.gov/el/fire_research/njason.cfm

2011-2014: Officers and Committee Members

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