

Jennifer X. WEN

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KEY AREAS OF EXPERTISE: FIRE, EXPLOSIONS, DETONATION, ACCIDENT INVESTIGATION, FORENSIC ANALYSIS

EDUCATION

BEng - Mechanical Engineering, Shanghai Jiaotong University, China, 1984.

PhD - Heat Transfer, Queen Mary and Westfield College, University of London, 1990.

Certificate in Management Studies – Oxford Brookes University, 1993

Postgraduate Certificate in Higher Education - South Bank University, 1994.

PROFESSIONAL EXPERIENCE

Faculty of Engineering, Kingston University, London, UK

Reader of Thermal Sciences

Oct. 1998-April 2000

Professor of Thermal Sciences

May 2000-present

Director of Research

Dec. 1999-present

Teaching and research within the broad area of thermal sciences. (More details to follow under TEACHING AND RESEARCH INTERESTS)

School of Engineering Systems and Design, South Bank University, London, UK

Senior Lecturer of Thermal Sciences.

Oct. 1993-Sep.1998

Teaching and research within the broad area of thermal sciences. (More details to follow under TEACHING AND RESEARCH INTERESTS)

Gas Research Centre, British Gas plc, London, UK

Oct. 1991-Oct. 1993

Senior Combustion Scientist, responsible for numerical modelling of laminar flames with detailed chemistry. The work was part of a collaborative project on fundamental combustion between British Gas, Gasunie and Gas de France. It was aimed at improving the design of low-emission gas burners to enhance indoor air quality. My job involved modifying the in-house Computational Fluid Dynamics (CFD) code COBRA to achieve better coupling of fluid dynamics, combustion chemistry and heat transfer as well as reviewing simplified/reduced chemical kinetic schemes for methane combustion and implementing them into the code. Further work also included validating the model with data from the LDA and LIF measurements of the collaborators in Gasunie and Gas de France.

CD-ADAPCO, London, UK

Nov. 1988-Sep. 1991

(Co-founded by Prof. David Gosman and Dr. Raad Issa of Imperial College London)

CFD Engineer, responsible for the development of the solver in STAR-CD – a commercial CFD code. Worked on implementing some turbulence modifications for buoyancy-driven flows, the discrete transfer method for radiation calculation and a simplified model for flows in porous media. Developed a post-processing package for particle tracking based on the Lagrangian algorithm. Also responsible for providing customer support and consultancy services to the company's clients on the use of CFD to solve practical engineering problems, which included heating and ventilation in buildings, external flows around buildings, clean room designs and dispersion of pollutants in the atmosphere, etc.

TEACHING INTERESTS

- Taught the following courses at undergraduate/graduate levels
 - Heat transfer
 - Fluid mechanics
 - Thermodynamics
 - Computational fluid dynamics
 - Building energy analysis (briefly for one term)
 - Engineering Sciences (briefly for one term)
- Supervising laboratory sessions and major project dissertations of both undergraduate and graduate students.
- Course Director for BSc in Computer Aided Engineering (1996-1998)- course administration, students advising and teaching tasks allocation.
- External Examiner for the fire courses at University of Central Lancashire (1995-2001) – quality assurance of exam papers, sitting on exam boards and degree panels.
- External examiner for the MSc in Fire Safety Engineering, and PGC and MSc in Hydrogen Safety at University of Ulster (2006-present)
- External examiner for the BEng and MSc on Fire and Explosion Engineering at Leeds University (2008-present)

RESEARCH INTERESTS

- **Computational Fluid Dynamics (CFD)** – development of sub-models for an in-house CFD code as well as open source CFD codes OPENFOAM, FDS as well as the KIVA code for which we purchased the source code.
- **Large Eddy Simulation (LES)** – investigations of sub-grid scale (SGS) modelling in the LES context. Applications of LES techniques to both accidental combustion and controlled combustion systems. For accidental combustion, my interest covers fires, explosions, detonation and transition from deflagration to detonation. For controlled combustion systems, I have worked on non-premixed, premixed and partially premixed

combustion as well as fuel air mixing in gas turbine combustors and impinging jet flows.

- ***Hydrogen combustion in the context of fire and explosion safety***
 - Hydrogen jet flames from very high-pressure release;
 - Flame impinging on surfaces and the resulting effect on hydrogen transport cylinders and storage vessels;
 - Liquid hydrogen spill and combustible cloud dynamics; and
 - Hydrogen combustion in semi-confined and vented geometries and the conditions for deflagration-to-detonation (DDT) processes
- ***Flammability study of hydrogen and hydrocarbon mixtures*** – conducting numerical tests to determine the lower and upper flammability of hydrogen and hydrocarbon blends in atmospheric and elevated pressure conditions.
- ***Vapour cloud explosion and detonation*** – accidental investigation, numerical modelling of vapour cloud explosions and detonation.
- ***Accidental release of gaseous and dense phase CO₂ during pipeline transmission in Carbon Capture and Storage (CCS) projects*** – development of numerical models for the thermodynamics governing phase transition during any accidental CO₂ release (including the possibility of snow CO₂ or dry ice formation) and coupling of the model with multi-phase flows in pipelines, high pressure release and subsequent dispersion in cloud or liquid CO₂ pool.
- ***LNG safety*** – Liquefied Natural Gas (LNG) is assuming increasing importance as a result of the sustained increase in world energy consumption and the growing recognition of its clean and environmentally friendly properties. Amongst other issues, important knowledge gaps exist in rapid phase transition as well as radiation hazards related to hazards of accidental LNG release. While preparation has started to initiate a pan European LNG projects, I already have two PhD students working on these two specific areas.
- ***Compartment Fires*** – numerical modelling of fires in enclosures with particular emphasis on the use of the laminar flamelet concept coupled with the probability density function approach for combustion, soot and turbulence-chemistry interaction. The objective is to advance our understanding and predictive capability of compartment fires. The predictive methods are being validated with published experimental data in the literature as well as some new data to be generated in the EC funded FIRENET project. The ultimate goal is to extend the investigations into large building spaces with the validated numerical models.

Another aspect of this effort is directed towards developing predictive methods for flame spread in the context of fires.

- ***Liquid/Gas Burner Simulated Pool Fires*** – The objective is to study pool fires in the context of building fire safety through numerical and experimental investigations. Within the context of traditional CFD, second moment closure turbulence models have been

developed for the near field “persistent flame zone” and the mass burning rates of liquid pool fires. Parallel experimental work has been carried out by Cranfield University to measure gas temperature, soot concentration and thermal radiation for three liquid fuels, i.e. heptane, methyl methacrylate (MMA monomer) and kerosine. Comparison has been made between the CFD predictions and published experimental data on pool fire mass burning rates and near field flows. Recent modelling effort in this area has been shifted towards using LES techniques. Particular emphasis is on the periodic oscillations of pool fires and accurate predictions of the dynamic behaviour and puffing frequency. The goal is to study the impact of plume/flame oscillations in relevant engineering applications such as fires and toxic gas spread.

- ***Radiative Heat Transfer*** - development of a spectral formulation, based on the discrete ordinate method, for radiative heat transfer in fires and combustion systems. The objective is to develop a calculation method of thermal radiation which is suitable for mixtures of gases and scattering particles, and yet computationally economic for coupling with CFD and LES techniques.
- ***Behaviour of glazing during enclosure fires*** - development of models for predicting the behaviour of glazing systems during enclosure fires. Coupling of these models with existing CFD and LES codes. The new models will be verified with data from parallel experimental work at University of Ulster.
- ***Micromist for fire suppression and explosion*** - numerical and experimental investigations on the dynamic “two-way” interaction of ultra fine water mist droplets for fire suppression and explosion control. In particular the following three aspects will be investigated: (i) gas-phase cooling, (ii) oxygen depletion/dilution and (iii) surface cooling and (iv) the attenuation of thermal radiation. Both the Eulerin-Lagrangian and Eulerin-Eulerin approaches will be considered within the frame of an existing large eddy simulation (LES) code.

RESEARCH FUNDING

CURRENT			
Dates		Funding Body	Title of Project/Funding (£) Secured
From	To		
1/2009	12/2009	FM Global, USA	Development of OPENFOAM for fire modelling \$55000 US dollar
9/2006	8/2010	EU FP6 (PI)	Hydrogen Combustion in the context of fire and explosion safety (HYFIRE) €1Mfor Kingston
9/2006	9/2009	EU FP6 (PI)	Nanoimist for fire suppression and explosion control (NANOMIST) €170Kfor Kingston

9/2007	9/2010	EU FP6 (PI)	Glazing behaviour in the fire environment (G-BIFE) €170K for Kingston
2009	2010	BP (contract agreed) (PI)	Detonation arrestor £40K
2009	2010	National Grid (invited to tender) (PI)	Gaseous and dense phase CO ₂ release (bid for £150K, expect to be at least partially funded)
<i>PAST</i>			
2006	2008	Pilkington (PI)	Modelling radiation heat transfer in glazing structures £42K
2006	2008	BP (PI)	Explosion modelling £50K
2006	2008	The Department for Communities and Local Government (PI)	Fire modelling £40K
2002	2006	EU FP5 (PI and co-ordinator)	Under-ventilated compartment fires €1.53M(€385K for Kingston)
2006	2008	KTP with Jeremy Gardeners Associates (PI)	Developing fire modelling capability for performance based fire safety design £170K
1995	1999	EPSRC (PI)	The application of field modelling to offshore compartment fires £156K
1998	2001	EPSRC (PI)	Numerical and experimental studies of pool fires £86K
1995	1996	EPSRC (PI)	Numerical modelling as a practical aid for development of smoke control strategies in buildings £10K
1996	2000	TCS with CHAM Ltd. (CI)	Development and validation of sub-models in PHOENICS for various industrial applications
1994	1997	Gas Research Centre (formerly British Gas plc)	Condensing boiler heat exchangers £48K
		The British University Vice-Chancellors' Committee ORS Awards	Various PhD projects Approx. 50K
		Kingston University internal funding through competitive bidding	Various projects Approx. 120K

PROFESSIONAL SERVICES

- Member of EPSRC Peer Review Colleges (1995-present).
- Member of EPSRC Research Proposal Ranking panels (1998 – present)
- Expert Evaluators Panels for EU Framework 4, 5, 6 and 7 Framework Research Program.
- Steering Committee Member of the UK Explosion Liaison Group (2007 – present)
- Member of the Expert Advisory Council for the EU Network of Excellence on Hydrogen Safety (HYSAFE) (2006- present)
- Co-ordinator of EU FP6 HYFIRE project (2006-2010).
- Co-ordinator of EU FP5 FIRENET project (2002-2006).
- External examiner for the Fire and Explosion MSc Course at Leeds (2008-present).
- Keynote Speaker at “Energy safety: New Challenges” organised by the Institute of Chemical Engineers (ICChemE) on 7 January 2009; “Use of CFD models in Fire Safety Engineering” organised by Engineers Ireland on 5/6 February 2009; the 1st European Summer School on Hydrogen Safety, the 12th Symposium on Combustion Processes in Poland (2007), the 2nd Int. Conf. on Performance Fire Codes, Hong Kong (2005) and an invited speaker at Fire Bridge (Int.) in Belfast (2005).
- Session Chair at the 4th Int. Seminar on Fire and Gas Explosion and the Scientific Committee of the 4th and 5th Int. Seminar on Fire and Gas Explosion (2004 and 2007) and Workshop on Enclosure Fires (2006).
- Member of editorial committee of Foxwell & Davies Scientific Publisher.
- Visiting Professor- Fire Safety Engineering Research Centre (FireSERT), University of Ulster, UK 2001-present
- Visiting Professor – City University of Hong Kong, Nov.-Dec. 2006
- Visiting Professor – Tsinghua University, China, 2000.

Reviewer - Combustion and Flame, Computers and Fluids, International Journal of Hydrogen Energy, Fire Safety Journal, Int. J of Heat and Mass Transfer, ASME J of Heat Transfer, etc. and various conferences.

Radiative Heat Transfer, Michael F. Modest, 2nd ed. Academic Press, 2002.

HONORS & AWARDS

The British and Chinese Government Technical Co-operation Scholarship	1985-1988
Frequent winners of maths competitions during secondary school education	1975-1980

LIST OF PUBLICATIONS (in reversed chronological order)

Journal Papers (published)

1. J. Wen, B Xu, V.H.Y. Tam, "Numerical study on spontaneous ignition of pressurized hydrogen release through a length of tube" in 'Combustion and Flame', (2009) doi:10.1016/j.combustflame.2009.06.012.
2. B Xu, J. Wen, "Large eddy simulation of vortical structures of a forced plane impinging jet" in 'Computers and Fluids', (2009) (In press)
3. S.A. Ferraris, I Madga, J. Wen, "Numerical Study of Backdraft and its Mitigation in Compartment Fire Scenarios with Different Vent Geometries" in 'Combustion Science and Technology', (2009) (In press)
4. B Xu, EL Hima, J. Wen, S. Dembele, V.H.Y. Tam, "Numerical study of spontaneous ignition of pressurized hydrogen release into air" in 'International Journal of Hydrogen Energy', (2009) (In press)
5. B Xu, EL Hima, J. Wen, S. Dembele, V.H.Y. Tam, T. Donchev, "Numerical study on the spontaneous ignition of pressurised hydrogen release through a tube into air." in 'Journal of Loss Prevention in the Process Industries', 21(2) March, pp. 205-213. ISBN/ISSN 0950-4230 (2008)
6. S.A. Ferraris, J. Wen, "LES of the Sandia Flame D using Laminar Flamelet Decomposition for Conditional Source-Term Estimation" in 'Flow, Turbulence and Combustion', 81(4), pp. 609-639. ISSN (print) 1386-6184.
7. B.P. Xu, J.X. Wen, S. Dembele, V.H.Y. Tam, S.J. Hawksworth, The effect of pressure boundary rupture rate on spontaneous ignition of pressurized hydrogen release, J Loss Prevention in the Process Industries, 22(3) 2009.
8. B.P. Xu, L. EL Hima, J.X. Wen, S. Dembele, V.H.Y. Tam and T. Donchev, Numerical study on the spontaneous ignition of pressurized hydrogen release through a tube into air, Journal of Loss Prevention in the Process Industries 21 (2008) 205–213.
9. J.X. Wen, K. Kang, T. Donchev and J.M. Karwatzki, Validation of FDS for the prediction of medium-scale pool fires, *Fire Safety Journal, Volume 42, Issue 2, March 2007, Pages 127-138*.
10. S. I. Magda, S. A. Ferraris, S. Dembele, J. X. Wen, Karwatzki, J , LES Simulation of a Backdraft with Water Mist, *The Applied Fire Science, Vol. 13:3, 2005*.
11. RAF Rosario, S Dembele and J X Wen, Investigation of Glazing Behaviour in a Fire Environment using a Spectral Discrete Ordinates Method for Radiative Heat Transfer, *Numerical Heat Transfer, Part , 52 (6): 489-506 2007*.
12. Ferraris, S.A. and Wen, J.X., Large Eddy simulation of a lifted turbulent jet flame, *Combustion and Flame, Volume 150, Issue 4, September 2007, Pages 320-339*.
13. S.A. Ferraris, J. X. Wen and S Dembele, Large Eddy Simulation of the Backdraft Phenomena, *The Fire Safety Journal, Volume 43, Issue 3, April 2008, Pages 205-225*.
14. Y. Kang and J. X. Wen, Large Eddy Simulation of a Small Pool Fire, *Combustion Science and Technology, 176 (12) , 2193-2223, Oct. 2004*.
15. G. Boustras, J. X. Wen and J N Fraser-Mitchell, The Investigation of Fire Growth in Dwellings Based On Stochastic Analysis, *J. APPLIED FIRE SCIENCE, Vol. 12(4) 271-291,2003-2004*.

16. G. Boustras and J. X. Wen, A study on the socio-economic and demographic significance of fire in the developed world and the developing countries, *Int. J on Engineering Performanced-Based Fire codes*, February, 2004.
17. S. Dembele, J. Zhang and J.X. Wen, Assessment of spectral narrow band and global gas radiation models for computational fluid dynamics simulations of pool fires, *Numerical Heat Transfer, part B*, 2005.
18. Dembele, S. and Wen, J. X., Evaluation of a Fast Correlated-K Approach for Radiation Calculation in Combustion Systems, *Numerical Heat Transfer, Part B, Volume 44, Number 4*, p. 365 – 385, 2003.
19. Liu, F. and Wen, J. X., The effect of different turbulence models on the CFD simulation of buoyant diffusion flames, *The Fire Safety Journal*, 37(2):125-151, 2002, ISBN 0379-7112 .
20. Huang, L. Y. and Wen, J. X., The effect of macroscopic and global radiative heat exchange on compartment fire modelling, *The Fire Safety Journal*, 36:205-223, 2001.
21. Wen, J.X., Liu, F. and Lo, S., Performance comparison of a buoyancy modified turbulence model with three LRN turbulence models for a square cavity, *Numerical Heat Transfer, Part B*, 39 (3): 257-276, 2001.
22. Dembele, S., Wen, J. X. and Sacadura, J. F., Experimental study of water sprays for the attenuation of fire thermal radiation, *Trans. ASME J. of Heat Transfer*, 123: 534-543, 2001.
23. Wen, J. X., Under-ventilated compartment fires, *FABIG Newsletter*, Issue No. 37:20-22, 2003.
24. Dembele, S. and Wen, J. X., Investigation of a spectral formulation for radiative heat transfer in one-dimensional fires and combustion systems, *Int. J. of Heat and Mass Transfer*, vol. 43, 2000, ISBN 0017-9310.
25. Dembele, S., Wen, J. X. and Sacadura, J. F., Analysis of the two-flux model for predicting water spray transmittance in fire protection application, *Trans. ASME J. of Heat Transfer*, vol. 122, 2000, ISBN 0022-1481.
26. Wen, J. X. and Huang, L. Y., CFD modelling of confined jet fires under ventilation-controlled conditions, *The Fire Safety Journal*, 34, pp. 1-24, 2000, ISBN 0379-7112.
27. Liu, F. and Wen, J. X., Development and validation of an advanced turbulence model for buoyancy driven flows in enclosures, *Int. J. of Heat and Mass Transfer*, vol. 42, pp. 3967-3981, 1999, ISBN 0017-9310.
28. Wen, J. X., Huang, L. Y., Amin, E. M. and Nolan, P., Modelling sooting jet fires in a large scale offshore compartment, *Proceedings of the Combustion Institute*, vol. 27, pp. 2881-1886, (originally *Proc. of the 28th Int. Symp. on Combustion*), 1998.
29. Huang, L. Y., Wen, J. X., Karayiannis, T. G., Matthews, R. D., Numerical prediction of high efficiency boiler heat exchanger performance, *J. of Applied Thermal Engineering*, vol. 18, no. 11, pp. 1089-1099, 1998, ISBN 1359-4311.
30. Huang, L. Y., Wen, J. X., Karayiannis, T. G., Matthews, R. D., CFD modelling of heat transfer in condensing heat exchangers, *Int. J. of Heat and Technology, Calore de Tecnologia*, vol. 15, no. 1, 1997, ISBN 0392-8764.
31. Huang, L. Y., Wen, J. X., Karayiannis, T. G., Matthews, R. D., CFD modelling of fluid flow and heat transfer in a shell and tube heat exchanger, *PHOENICS Journal of Computational Fluid Dynamics & Its Applications*, vol. 9, no. 2, 1996, ISSN 0969-8248.
32. Xi, S. T. and Wen, J. X., Comparative study on difference schemes in the computation of thermal stratified flows, *The Academic Journal of Shanghai Jiaotong University*, vol. 29, no. 5, 1995.

33. Wen, J. X., Briggs, A. and Rose, J. W., Enhancement of condensation heat transfer on integral-fin tubes using radiused fin-root fillets, *Journal of Enhanced Heat Transfer*, Vol. 1, No. 2, pp. 211-217, 1994, ISBN 1065-5131.
34. Briggs, A., Wen, J. X. and Rose, J. W., Accurate heat-transfer measurements for condensation on horizontal integral-fin tubes, *Trans. ASME, J. Heat Transfer*, vol. 114, pp. 719-726, 1992, ISBN 0022-1481.

Invited Articles in Bulletin, Newsletter and trade journals

35. J. X. Wen and V.H.Y. Tam, The HYFIRE project & Numerical prediction of spontaneous ignition of pressurized hydrogen release, FABIG News Letter, September 2008.
36. Wen, J. X., Under-ventilated compartment fires, FABIG Newsletter, Issue No. 37:20-22, 2003.
37. Wen, J. X., Fire protection and fire fighting in china's oil and gas industries - some snapshots, *Industrial Fire Journal*, Dec., 2000, ISSN 0964-9719.
38. Wen, J. X., CFD modelling of the confined jet fire tests in the Phase 2 project, *FABIG (Fire and Blast Information Group) Newsletter*, Issue No. 26, pp. 6-11, 2000.
39. Wen, J. X., Firefighting offshore - new approaches, *Industrial Fire Journal*, March, 1998, ISSN 0964-9719.
40. Wen, J. X., Computational fluid dynamics - a new tool for R&T on domestic gas utilisation, *Gas in the Home Bulletin*, British Gas plc, 1992.

Conference Papers and Presentations

41. B Xu, J. Wen, V.H.Y. Tam, "*NUMERICAL STUDY ON SPONTANEOUS IGNITION OF PRESSURIZED HYDROGEN RELEASE THROUGH A TUBE*", Proc. 3rd International Conference on Hydrogen Safety, Sep., 2009, Corsia, France, (2009)
42. A Heidari, S.A. Ferraris, J. Wen, V.H.Y. Tam, "*Numerical simulation of large scale hydrogen detonation*", Proc. 3rd International Conference on Hydrogen Safety, Sep., 2009, Corsia, France, (2009)
43. M Rao, J. Wen, V.H.Y. Tam, "*Numerical Study of Hydrogen Explosions in a Vehicle Refill Environment*", Proc. 3rd International Conference on Hydrogen Safety, Sep., 2009, Corsia, France, (2009) A Heidari, S.A. Ferraris, J. Wen, V.H.Y. Tam, "*Predicting Flame Acceleration Using a Coherent Flame Model*", 22nd International Colloquium on the Dynamics of Explosions and Reactive Systems, (2009)
44. S.A. Ferraris, I Madga, J. Wen, "*Large Eddy Simulation of the Backdraft phenomenon and its Mitigation in a Compartment Fire*", 22nd International Colloquium on the Dynamics of Explosions and Reactive Systems, (2009)
45. J. Wen, Z Chen, S. Dembele, V.H.Y. Tam, "*Towards Large Eddy Simulation of LNG Pool Fires*", Hazards XXI - Process safety and environmental protection, 3 DAY SYMPOSIUM AND EXHIBITION ON 10th – 12th November 2009, Weston Building, University of Manchester, UK, (2009)
46. M Rao, J. Wen, V.H.Y. Tam, "*Numerical Study of Large Scale Hydrogen Explosions and Detonation*", Hazards XXI - Process safety and environmental protection, 3 DAY SYMPOSIUM AND E, (2009)

47. J. Wen, B Xu, S. Dembele, V.H.Y. Tam, "*Numerical study on spontaneous ignition of direct release of pressurized hydrogen into air*", NHA Annual Hydrogen Conference - 2008, March/April, Sacramento, California, USA, (2008)
48. S. Dembele, A.F. Rosario, J. Wen, "*NUMERICAL STUDY OF GLAZING BEHAVIOUR IN FIRE CONDITIONS*", 3RD INTERNATIONAL SYMPOSIUM, ~Building "Center of Excellence" o, March, Tokyo, Japan, (2008)
49. S. Dembele, A.F. Rosario, J. Wen, P.D. Warren, S Dale, "*Simulation of Glazing Behavior in Fires using Computational Fluids Dynamics and Spectral Radiation Modeling*", 9th IAFSS (The International Association for Fire Safety Science) Symposium, Sep., Karlsruhe, Germany, (2008)
50. J. Wen, S. Dembele, M Yang, V.H.Y. Tam, J Wang, "*Numerical Investigation on the Effectiveness of Water Spray Deluge in Providing Cooling, Smoke Dilution and Radiation Attenuation in Fires*", 9th IAFSS (The International Association for Fire Safety Science) Symposium, Sept., Karlsruhe, Germany, (2008)
51. D Petkova, T. Donchev, J. Wen, "*Modelling of CFRP Strengthened RC Beams at Elevated Temperatures*", International Conference - Excellence in Concrete Construction - Through Innovat, ISBN/ISSN 978-0-415-47592-1 (2008)
52. J. X. Wen, B Xu, S. Dembele, V.H.Y. Tam, Predicting spontaneous ignition of under-expanded hydrogen jets: the issue of numerical accuracy, 32nd International Symposium on Combustion (2008) McGill University, Canada.
53. S. Dembele, A.F. Rosario, J. Wen, P.D. Warren, K.S. Dale, "*Simulation of Glazing Behavior in Fires using Computational Fluids Dynamics and Spectral Radiation Modeling*", 9th IAFSS (The International Association for Fire Safety Science) Symposium, Sep., Karlsruhe, Germany, (2008)
54. J. Wen, S. Dembele, M Yang, V.H.Y. Tam, J Wang, "*Numerical Investigation on the Effectiveness of Water Spray Deluge in Providing Cooling, Smoke Dilution and Radiation Attenuation in Fires*", 9th IAFSS (The International Association for Fire Safety Science) Symposium, Sept., Karlsruhe, Germany, (2008)
55. J. X. Wen, B Xu, S. Dembele, V.H.Y. Tam, The effect of pressure boundary rupture rate on the spontaneous ignition of pressurized hydrogen release, Seventh International Symposium on Hazards, Prevention, and Mitigation of Industrial Explosions, St Petersburg, Russia, 2008.
56. J. X. Wen, B Xu, S. Dembele, V.H.Y. Tam, The dispersion characteristics of Micromist in enclosures – a proof of concept numerical study on using Micromist as a soft barrier for explosion control, Seventh International Symposium on Hazards, Prevention, and Mitigation of Industrial Explosions, St Petersburg, Russia, 2008.
57. J. X. Wen, B. P. Xu, S. Dembele, V.H.Y. Tam and S.J. Hawksworth, Numerical study on spontaneous ignition of direct release of pressurized hydrogen into air, NHA Annual Hydrogen Conference 2008 with Hydrogen EXPO US, Sacramento Convention Center, California, USA.
58. V.H.Y. Tam, M. Wang, C.N. Savvides, E. Tunc, S. Ferraris, and J.X. Wen, Simplified Flammable Gas Volume methods for Gas Explosion Modelling from Pressurized

- Gas Releases: A comparison with large scale experimental data, Symposium Series NO. 154 © 2008 IChemE.
59. J.X. Wen, From "FIRENET" to global collaboration in fire research, 3RD INTERNATIONAL SYMPOSIUM, The 21st Century Center of Excellence Program : TOKYO UNIVERSITY OF SCIENCE, 2008.
 60. Siaka Dembele, Ricardo Rosario, Jennifer Wen, Paul Warren, and Stuart Dale, Numerical study of glazing behaviour in fire conditions, 3RD INTERNATIONAL SYMPOSIUM, The 21st Century Center of Excellence Program : TOKYO UNIVERSITY OF SCIENCE, 2008.
 61. [J. Wen](#), [B Xu](#), [S. Dembele](#), [V.H.Y. Tam](#), "*Numerical study on spontaneous ignition of direct release of pressurized hydrogen into air*", NHA Annual Hydrogen Conference - 2008, March/April, Sacramento, California, USA, (2008).
 62. J. Wen, Glazing response in fires, Keynote speech at the 4th Int. Conf. on Performance Based Fire Codes, Beijing, 2007.
 63. Wen, J., Spontaneous ignition of pressurised hydrogen release, Keynote speech at the *XX International Symposium on Combustion Processes, Sep. 2-5, 2007, Pultusk, Poland*.
 64. Jennifer Wen, S Ferraris, and B Hume, J Fay, Computer Modelling of Basement Fires, *Proc. of Interflam 2007, 3rd - 5th September 2007 University of London, Royal Holloway College, UK*.
 65. Siva P R. Muppala and Jennifer X. Wen, Modelling Issues of Lean High-Pressure Turbulent Premixed Hydrogen-enriched Hydrocarbon Combustion at Gas Turbine Conditions, 5th International Energy Conversion Engineering Conference and Exhibit (IECEC), 25-27 June 2007, St. Louis, Missouri, USA. AIAA 2007-4729.
 66. S. Muppala, N.K. Aluri, B. Manickam, F. Dinkelacker, and J.X. Wen, Reaction Modelling of Multi-Component Fuel Lean Premixed Turbulent Flames, European Combustion Meeting 2007, Chania, Greece - Ref. No. ECM2007A12.
 67. Zhang, J., Dembele, S. and Wen J. X., Exploratory Study of Under-expanded Sonic Hydrogen Jets and the Resulting Jet Flames, *5th International Seminar on Fire and Explosion Hazards, April 2007, Edinburgh, UK*.
 68. Wen, J., Spontaneous ignition of pressurised hydrogen release, *40th UKELG Discussion meeting, 19-20 Sep, 2007, Cardiff, UK*.
 69. Dembele, S., Tam, V.H.Y., Ferraris, S., Rosario, R.A.F. and Wen, J.X, Effectiveness of water deluge in fire suppression and mitigation, *LP2007 International Symposium Loss Prevention and Safety Promotion in the Process Industries, May 2007, Edinburgh, UK*.
 70. B. P. Xu, L. EL Hima, J. X. Wen, S. Dembele and V.H.Y. Tam, Numerical Study of Spontaneous Ignition of Pressurized Hydrogen Release into Air, *Proc. 2nd International Conference on Hydrogen Safety, Sep. 11-13, 2007, San Sebastian, Spain*.
 71. Muppala, S., Wen, J.X., Aluri, N.K., Dinkelacker, F., Molecular Effects of Hydrocarbon Addition on Turbulent Hydrogen Flame Propagation, *Proc. 2nd International Conference on Hydrogen Safety, Sep. 11-13, 2007, San Sebastian, Spain*.
 72. [S. Muppala](#), [J. Wen](#), "*Lean Premixed Turbulent Flames vs. Hydrogen Explosion: A Short Survey on Experimental, Theoretical and Analytical Studies*", 39th UKELG Meeting on Experimental studies in Gas Explosions, March, Kingston University, London, (2007).
 73. Petkova, D., T.Donchev, Wen, J, K.Etebar and H.Hadavinia. Effect of Elevated Temperatures on the Bond between FRP and Concrete. *InterFlam 2007, 3-5 September 2007, London, UK*.

74. Donchev T., Wen, J and Papa, E. Effect of Elevated Temperatures on CFRP Strengthened Structural Elements. 10th International Conference Fire and Materials, 29-31 January 2007, San Francisco, USA
75. We, J. X., Under-ventilated fires – the EU funded FIRENET project, Keynote speech at the Enclosure Fire workshop, May 2006, Belfast, UK.
76. Ferraris, S., Dembele, S. and Wen, J. X., Large eddy simulation of the backdraft phenomena, invited presentation Fire Bridge 2, Belfast, 2005.
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