Chilworth
Pacific FIRE
Testing, Litigation Support, Modeling, Research

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CURRICULUM VITAE

Joe Urbas, Ph.D.
Technical Director
Fire Sciences
Chilworth Pacific Fire Laboratories, Inc.
Kelso, Washington

PROFESSIONAL EXPERIENCE

Fire Research

- Developed the Intermediate Scale Calorimeter fire test method into an ASTM standard, allowing heat release measurements on assemblies and collection of data for the input in fire models. The method is being developed into an ISO standard.

- Managed and conducted fire research projects for American Forest and Paper Association, Forintek, National Institute of Standard and Technology (NIST), and other clients.

- Research leader of a large fire research project in Slovenia "The Study of Fire Growth and its Effects on People and Buildings". The project was used as a basis for new fire safety legislation in Slovenia.

- Research leader of a five-year project involving modeling of fire test methods using input data from TGA, DTA, and DSC.

- Guest scientist in the Building and Fire Research Laboratory at the National Institute of Standards and Technology in Gaithersburg, MD. Procedures were developed to use the Cone-calorimeter for measuring heat of gasification.

- Visiting scientist in BASF - Germany (1989), worked on the experimental part of a doctor's degree thesis "Applications of the Cone-calorimeter".

- Coordinator of the International Cone-calorimeter Interlaboratory Study.

- Currently principal investigator of the research project “Techniques for Obtaining and Using the Property Data Needed to Calculate the Boundary Conditions in the CFD Fire Models” funded by BFRL, NIST.

Lectures

- Taught graduate and undergraduate level fire protection engineering courses at Portland State University, Department of Engineering and Computer Science (“Introduction in Fire Protection Engineering” and “Performance Based Design”).

- Taught short courses in fire protection engineering to building officials and fire marshals.

- Two years at the University of Ljubljana (Slovenia), Department of Chemistry, and Department of Safety at Work and Fire Safety.

Testing Experience

- Supervised and conducted hundreds of fire resistance tests of load bearing and non-load bearing steel, concrete, wood, and masonry structures.
- Supervised and conducted numerous standard reaction to fire tests according to European and U.S. standards.
- Designed fire resistance furnaces.

Fire Engineering and Litigation

- Conducted fire simulations involving small scale, intermediate scale and full scale testing, as well as computer modeling and consulting, for numerous large and small fire litigation cases in the United States and Canada.

- Major fire case expert witness experience.

- Designed fire safety measures for over fifty new and existing buildings using building and other fire regulations and computer fire models such as ASET, FAST, HAZARD I, FPETOOL and EVACNET.

- Performed analysis of various furniture products, building materials and structures in different fire scenarios using computer fire models such as Fire Dynamic Simulator (FDS).

Product Development

- Developed a new noncombustible vermiculite board and designed the manufacturing process. The product received several international awards and has been successfully produced and marketed for the last eighteen years.

- Developed wood fiberboard with improved fire properties, fire doors, and vermiculite and intumescent coatings for steel structure protection. All the products have been successfully produced and marketed.

EMPLOYMENT HISTORY

March 2006	Pacific Fire Laboratory, Inc acquired by Chilworth Technology, Inc. Kelso, WA, Technical Director, Fire Sciences
1996 – March 2006	Pacific Fire Laboratory, Inc., Kelso, WA President / Fire Scientist
1994 - 1996	Western Fire Center, Inc., Kelso, WA Fire Scientist / Laboratory Manager
1992 - 1994	Weyerhauser Fire Technology Laboratory, Longview, WA Scientist / Engineer

1987 - 1991	UNIVERSITY OF LJUBLJANA, Faculty for Chemistry and Chemical Technology, Center for Fire Research Fire Scientist
1986-1987	IZOLIRKA - FIRE ENGINEERING AND CONSULTING GROUP Head of Fire Engineering Department
1981-1986	INSTITUTE FOR TESTING AND RESEARCH OF STRUCTURES AND MATERIALS, Ljubljana, Slovenia Head of Fire Technology Laboratory

DEGREES

1992 Ph.D. in Chemical Sciences, University of Ljubljana

1983 MS in Chemical Engineering, University of Zagreb

1975 BS in Chemistry, University of Ljubljana

ORGANIZATIONAL MEMBERSHIPS

- Member of ASTM, E5 Committee
- Member of SFPE
- Member of NFPA
- Member of IAFSS
- Member of Combustion Institute
- Member of International Standards Organization, Technical Committee 92, SC 1, Working Groups 1-7, 1982-1991, and 1994 - Present, project leader of the ICAL TG
- U.S. assigned expert to International Standards Organization, Technical Committee 92, Subcommittee 1 (Reactions to Fire)

PUBLICATIONS

1. NEGOR Panels - A New Product by Brest, Les, Ljubljana, 9/8, 219-220, 1980.

2. Steel an Reinforced Concrete Structures from the Viewpoint of Fire Protection, Informacije ZRMK, Ljubljana, 23(1982)5(237), p.4.

3. New Construction Materials in Fire-Resistant Structures in Yugoslavia. YUDIMK Congress, 17th Symposium on Research and Utilization of Modern Achievements in Our Construction in the Field of Materials and Structures, Collection of Papers, October 1982, Sarajevo, Tome 4, pp. 471-482.

4. Fire-resistant Construction in Slovenia (and Yugoslavia) - Current State and Causes and consequences of this State, (Preventive Fire Safety Protection in Construction), Informacije ZRMK, Ljubljana, 23(1982)4(236), p. 3.

5. Fire Protection in Construction - Materials and Structures, Annual Convention of Construction Designers of Slovenia, 4, 1982, Bled, -/Ref./ U 3, pp. 25-30.

6. /JUS/, Belgrade, (1982)7/8, pp. 361-366. System of Ensuring Quality in the Field of Preventive Fire Safety in Yugoslavia and Technical Obstacles in the Exportation of Our Fire Resistant Materials and Structures, Standardizacija /JUS/, Belgrade, (1982)7/8, pp. 361-366.

7. System of Ensuring Quality in the Field of Preventive Fire Safety in Yugoslavia and Technical Obstacles in the Exportation of Our Fire Resistant Materials and Structures, Atestiranje '82: Collection of Papers, Svetozarevo, Serbian Association for Development of Quality and Standardization, -/Ref./ C.10, p. 15.

8. Steel Structures from the Viewpoint of Preventive Fire Safety, Fire, Explosion, Prevention: Scientific, Professional and Informative Journal, (1983)3, pp. 33-37.

9. Wall Claddings Based on Expanded Polystyrene - Behavior During Fire, Delo in Varnost, Ljubljana, 28(1983)3, pp. 110-114.

10. Preventive Fire Protection in Construction, /part of article/ Views of ZRMK Researchers on Construction and Physical Issues, Gradbeni Vestnik, Ljubljana, 33(1984)/10, pp. 221-
229.

11. Methodology of Establishing Standards in the Field of ISO Standards, Federal Convention on Fire Protection, 2.: Novi Sad, 23rd to 25th April, 1985, pp. 213-217.

12. Joze Urbas, Esad Hadziselimovic, Indoor Fires - Survey of Specific Experimental and Theoretical Research Projects (Development of Fire to Flashover), Fire, Explosion, Prevention, Sarajevo, July 1985, No. 2.

13. Guidelines for Drawing up Fire Safety Regulations in Construction, Annual report for 1984, ZRMK Ljubljana, 11/12/1984, pp. 1-143.

14. Joze Urbas, Esad Hadziselimovic, Indoor Fires - Survey of Specific Experimental and Theoretical Research Projects (Fully Developed Fire), Fire, Explosion, Prevention, Sarajevo, July 1985, No. 3.

15. Fire Development in Large Rooms Fitted with Heat and Smoke Ventilation Devices, Collection of Papers, Yugoslav Conference "Smoke and Heat Ventilation during Fire", 22nd and 23rd May, Bled, 1986.

16. Joze Urbas, Esad Hadziselimovic, Characteristics of Fire Development and Expansion of Structures Caused by Natural Disasters, Collection of Papers of the Yugoslav Conference “Natural Disasters and Catastrophes”, 23rd to 25th October, 1986, Budva.

17. Example of Solving Construction Fire Safety of Rack Warehouses with High-Level Fire Hazard, Delo in Varnost, 3/86.

18. Computer-Aided Analysis, Design and Optimization of Evacuation Problems, Obramba in Zascita, 1986.

19. Research - a Significant Part of Fire Safety, Professional Conference “Work Safety and Fire Safety - Present Conditions and Developmenent”, Collection of Papers, 13th and 14th November, Portoroz, 1986.

20. Joze Urbas, Peter Bukovec, Resistance of Insulation Materials to Effects of Fire, Fire Engineering, December, 1986.

21. Fire Safety in Light of Building Regulations, Ujma, 2, 1988.

22. J. Troitzch, International Plastics Flammability Handbook (J. Urbas - Chapter on Yugoslav Regulations and Testing Methods), 2nd Edition, Hauser Publishers, 1990.

23. Some Investigations on Ignition and Heat Release of Building Materials Using the Cone Calorimeter, Interscience Communications Ltd.; National Institute of Standards and Technology; Building Research Establishment and Society of Fire Protection Engineers, Interflam‘90, International Fire Conference, 5th, September 3-6, 1990.

24. Vytenis Babrauskas, Joze Urbas, Use of the Cone Calorimeter to Measure Noncombustibility, 2nd International Symposium on Heat Release and Fire Hazard, February 27-28, 1991, Brussels.

25. Computer Fire Models in Fire Protection Engineering, Ujma, 3, June, 1991.

26. V. Babrauskas and S.J. Grayson, Heat Release in Fires (V. Babrauskas, J. Urbas and L. Richardson, Chapter 8, Related Quantities, Non-combustibility), Elsevier Applied Science LTD, London and New York, 1992.

27. J. Urbas, J.R. Shaw, Testing of Wall Assemblies on Intermediate Scale Calorimeter, Proceedings of the International Conference on Fire Safety, Volume 18, San Francisco, January 11 to 15, 1993.

28. J. Urbas, The Conditions of Fire Testing in the Cone Calorimeter, Ph.D. Thesis, University of Ljubljana, Slovenia, 1992.

29. Non-Dimensional Heat of Gasification Measurements in the Intermediate Scale Rate of Heat Release Apparatus, Fire and Materials,an International Journal, 17,259-263 (1993).

30. J. Urbas and W.J. Parker , Surface Temperature Measurements on Burning Wood Specimens in the Cone Calorimeter and the Effect of Grain Orientation, Fire and Materials, an International Journal, 17, 205-208 (1993).

31. J. R. Shaw and J. Urbas, An Intermediate Scale Calorimeter for Building Materials and Assemblies, Fire and Materials, an International Journal, 17, 259-263 (1993).

32. J. Urbas and J.R. Shaw, Testing Wall Assemblies on an Intermediate-Scale Calorimeter (ICAL),Fire Technology, an International Quarterly Journal, 29, 332-349 (1993) .

33. J. Urbas, G.E. Luebbers, The Intermediate Scale Calorimeter (ICAL): A New E-5 Standard, ASTM Standardization News, November 1994.

34. J. Urbas, G.E. Luebbers, The Intermediate Scale Calorimeter Development, Fire and Materials, an International Journal, 19, 65-70 (1995).

35. Using ICAL To Obtain Input Data for Fire Models, Proceedings of the International Conference on Fire Safety, Volume 20, San Francisco, January 9 to 13, 1995.

36. J. Urbas, M. Janssens, Comparison of Small and Intermediate Scale Heat Release Data, Interscience Communications Ltd.; Conference Proceedings of the Seventh International Interflam Conference, Cambridge, England, 26-28 March, 1996.

37. Use of Modern Test Methods in Fire Engineering and Litigation, Proceedings of the Fire Risk & Hazard Symposium, San Francisco, June 26-28, 1996.

38. J. Urbas, William J. Parker, Impact of Air Velocity on Ignition in the Intermediate Scale Calorimeter (ICAL), Fire and Materials, an International Journal, 21, 143-151 (1997).

39. V. Babrauskas, James A. White, Joe Urbas, Testing for Surface Spread of Flame: New Tests to Come into Use, Building Standards, March-April 1997.

40. Use of Modern Test Methods in Fire Engineering and Litigation, Fire & Arson Investigator, Volume 48, Number 2, December 1997.

41. J. Urbas, William J. Parker, Using the ICAL to Determine the Lateral Flame Spread Constants for a Wall Material, INTERFLAM'99, 8th International Fire Science & Engineering Conference, Proceedings, Edinburgh, Scotland, UK, June 1999.

42. BDMC Interlaboratory Test Programme, Fire and Materials, an International Journal, 2002; 26: 29-35.

43. J. Urbas, William J. Parker, Gerald E. Luebbers, Surface Temperature Measurements on Burning Materials Using an Infrared Pyrometer: Accounting for Emissivity and Reflection of External Radiation, Fire and Materials an International Journal, 2004; 28: 33-53.

44. Effects of Retainer Frame, Irradiance Level, and Specimen Thickness on Cone Calorimeter Test Results, Fire and Materials, an International Journal, 2005; 29: 1-13.

45. J. Urbas, William J. Parker, Surface Temperature Measurement in a Fire Environment Using an Infrared Pyrometer, Proceedings of the 8th IAFSS Conference, Beijing, September 2005.

46. W. J. Parker, J. Urbas, Heat of Gasification of Char Forming Materials, Proceedings of the 8th IAFSS conference, Beijing, September 2005.