




APPLICATIONS OF STRUCTURAL FIRE ENGINEERING



Organised in frame of COST Action
Integrated Fire Engineering and Response

Program


	Panel topic	Moderator
 8:00-8:30	Opening + Poster session	
8:30-9:30	Case study	De La Quintana J.
9:30-10:30	Latest development in fire testing	Outinen J.
10:30-11:00	Coffee break + Poster session	
11:00-12:00	Current stage of fire modelling	Rein G.
12:00-13:00	Advanced materials	Zaharia R.
13:00-14:00	Photo + Lunch + Poster session	
14:00-15:00	Simple elemental modelling	Vila Real P.
15:00-16:00	Advanced mechanical modelling	Kodur V.
16:00-16:30	Coffee break + Poster session	
16:30-17:30	Compressed elements in fire	Kwasniewski L.
17:30-18:30	Connections in fire	Tan K.H.
19:30	Dinner	
21:00	Poster awards + Music evening	

Panel discussions

Poster sessions – poster competition

- ❑ [Case study](#), moderator De La Quintana J., Spain
- ❑ [Latest development in fire testing](#), moderator Outinen J., Finland
- ❑ [Current stage of fire modelling](#), moderator Rein G., United Kingdom
- ❑ [Advanced material modelling](#), moderator Zaharia R., Romania
- ❑ [Development of elemental modelling](#), moderator Vila Real P., Portugal
- ❑ [Advanced mechanical modelling](#), moderator Kodur V., USA
- ❑ [Compressed elements in fire](#), moderator Kwasniewski L., Poland
- ❑ [Connections in fire](#), moderator Tan K.H., Singapore

Program

	Panel topic	Moderator
8:00-8:30	Opening + Poster session	
 8:30-9:30	Case study	De La Quintana J.
9:30-10:30	Latest development in fire testing	Outinen J.
10:30-11:00	Coffee break + Poster session	
11:00-12:00	Current stage of fire modelling	Rein G.
12:00-13:00	Advanced materials	Zaharia R.
13:00-14:00	Photo + Lunch + Poster session	
14:00-15:00	Simple elemental modelling	Vila Real P.
15:00-16:00	Advanced mechanical modelling	Kodur V.
16:00-16:30	Coffee break + Poster session	
16:30-17:30	Compressed elements in fire	Kwasniewski L.
17:30-18:30	Connections in fire	Tan K.H.
19:30	Dinner	
21:00	Poster awards + Music evening	




Case study of performance based fire engineering

Moderator De La Quintana J.

8:00-8:30	
8:30-9:30	Zhang J. Using opensees for an RC frame in fire
9:30-10:30	Lopes N. Evaluation of the fire resistance of the steel structure of a waste treatment plant using structural fire safety engineering
10:30-11:00	
11:00-12:00	Kotsovinos P. Fire resistance of steel trusses with opensees
12:00-13:00	Du Yong D. Loading-bearing capacity method for structural fire safety design – A case study
13:00-14:00	
14:00-15:00	Giuliani L. Simulation of the structural behaviour of steel-framed building in fire
15:00-16:00	
16:00-16:30	Nigro E. Application of Fire Safety Engineering for open car parks in Italy
16:30-17:30	
17:30-18:30	Zehfuss J. Case studies of a new simplified natural fire model and safety concept for structural fire safety design
19:30	
21:00	Molkens T. Structural fire engineering in building renovation: Application of natural fire and heat transfer models to guarantee fire safety

Program

	Panel topic	Moderator
8:00-8:30	Opening + Poster session	
8:30-9:30	Case study	De La Quintana J.
 9:30-10:30	Latest development in fire testing	Outinen J.
10:30-11:00	Coffee break + Poster session	
11:00-12:00	Current stage of fire modelling	Rein G.
12:00-13:00	Advanced materials	Zaharia R.
13:00-14:00	Photo + Lunch + Poster session	
14:00-15:00	Simple elemental modelling	Vila Real P.
15:00-16:00	Advanced mechanical modelling	Kodur V.
16:00-16:30	Coffee break + Poster session	
16:30-17:30	Compressed elements in fire	Kwasniewski L.
17:30-18:30	Connections in fire	Tan K.H.
19:30		Dinner
21:00	Poster awards + Music evening	




Latest development in fire testing

Moderator Outinen J.

8:00-8:30
8:30-9:30
 9:30-10:30
10:30-11:00
11:00-12:00
12:00-13:00
13:00-14:00
14:00-15:00
15:00-16:00
16:00-16:30
16:30-17:30
17:30-18:30
19:30
21:00

Stadler M.	Munich fire tests on membrane action of composite slabs in fire: Test results and recent findings
Cheng X.	Prediction of temperature variation in an experimental building
Huang S-S.	A structural fire engineering prediction for The Veselí fire tests, 2011
Outinen J.	Fire protection of steel structures using Automatic water extinguishing system
Han J.	Effective thermal conductivity of fire proof materials and the measuring method
Tsatsoulas D.	The impact of flame retarded timber on Greek industries
Bilotta A.	Adhesion at high temperature of FRP bars straight or bent at the end of concrete slabs

Program

	Panel topic	Moderator
8:00-8:30	Opening + Poster session	
8:30-9:30	Case study	De La Quintana J.
9:30-10:30	Latest development in fire testing	Outinen J.
 10:30-11:00	Coffee break + Poster session	
11:00-12:00	Current stage of fire modelling	Rein G.
12:00-13:00	Advanced materials	Zaharia R.
13:00-14:00	Photo + Lunch + Poster session	
14:00-15:00	Simple elemental modelling	Vila Real P.
15:00-16:00	Advanced mechanical modelling	Kodur V.
16:00-16:30	Coffee break + Poster session	
16:30-17:30	Compressed elements in fire	Kwasniewski L.
17:30-18:30	Connections in fire	Tan K.H.
19:30		Dinner
21:00	Poster awards + Music evening	

Coffee Break


+

Poster session

Next session starts at 11:00



Program

	Panel topic	Moderator
8:00-8:30	Opening + Poster session	
8:30-9:30	Case study	De La Quintana J.
9:30-10:30	Latest development in fire testing	Outinen J.
10:30-11:00	Coffee break + Poster session	
 11:00-12:00	Current stage of fire modelling	Rein G.
12:00-13:00	Advanced materials	Zaharia R.
13:00-14:00	Photo + Lunch + Poster session	
14:00-15:00	Simple elemental modelling	Vila Real P.
15:00-16:00	Advanced mechanical modelling	Kodur V.
16:00-16:30	Coffee break + Poster session	
16:30-17:30	Compressed elements in fire	Kwasniewski L.
17:30-18:30	Connections in fire	Tan K.H.
19:30		Dinner
21:00	Poster awards + Music evening	



Current stage of fire modelling

Moderator Rein G.

8:00-8:30	
8:30-9:30	
9:30-10:30	
10:30-11:00	
11:00-12:00	Björkman J. Fire load survey of commercial premises in Finland
12:00-13:00	Heinisuo M. Systematisation of design fire loads in an integrated fire design system
13:00-14:00	Rein G. Travelling fires in large compartments: Realistic fire dynamics for structural design
14:00-15:00	Shi K. Stochastic analysis of structures in fire by Monte Carlo simulation
15:00-16:00	Dudáček A. Fire simulation application in fire safety design for tunnel structures
16:00-16:30	
16:30-17:30	Klinzmann C. The role of active fire protection measures in a national fire safety concept in Germany
17:30-18:30	Petrini F. Computational modelling for performance based fire engineering (PBFE)
19:30	
21:00	Gentili F. Role of CFD in the quantitative assessment of structural performance in fire scenarios

Program


	Panel topic	Moderator
8:00-8:30	Opening + Poster session	
8:30-9:30	Case study	De La Quintana J.
9:30-10:30	Latest development in fire testing	Outinen J.
10:30-11:00	Coffee break + Poster session	
11:00-12:00	Current stage of fire modelling	Rein G.
12:00-13:00	Advanced materials	Zaharia R.
13:00-14:00	Photo + Lunch + Poster session	
14:00-15:00	Simple elemental modelling	Vila Real P.
15:00-16:00	Advanced mechanical modelling	Kodur V.
16:00-16:30	Coffee break + Poster session	
16:30-17:30	Compressed elements in fire	Kwasniewski L.
17:30-18:30	Connections in fire	Tan K.H.
19:30	Dinner	
21:00	Poster awards + Music evening	





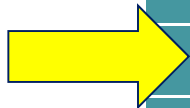
Advanced material modelling at elevated temperature

Moderator Zaharia R.

8:00-8:30	Lee J.	Modelling creep in steel structures exposed to fire
8:30-9:30	Lange J.	Material and creep behaviour of S460 in case of fire: Experimental investigation and analytical modelling
9:30-10:30		
10:30-11:00		
11:00-12:00	Korzen M.	Constitutive equations for structural steel subjected to fire: Some remarks
 12:00-13:00	Hopkin D.	A numerically modified conductivity model for softwood exposed to parametric design fire
13:00-14:00		
14:00-15:00	Abramowicz M.	Mechanical properties of reinforcing bars heated up under steady stress conditions
15:00-16:00	Ervine A.	Thermal diffusivity of tensile cracked concrete
16:00-16:30	Hager I.	Colour change of heated concrete: RGB colour histogram analysis as a method for fire damage assessment of concrete
16:30-17:30		
17:30-18:30		
19:30		
21:00	Smith H.K.M	Shear strength of concrete at elevated temperature

Program

	Panel topic	Moderator
8:00-8:30	Opening + Poster session	
8:30-9:30	Case study	De La Quintana J.
9:30-10:30	Latest development in fire testing	Outinen J.
10:30-11:00	Coffee break + Poster session	
11:00-12:00	Current stage of fire modelling	Rein G.
12:00-13:00	Advanced materials	Zaharia R.
13:00-14:00	Photo + Lunch + Poster session	
14:00-15:00	Simple elemental modelling	Vila Real P.
15:00-16:00	Advanced mechanical modelling	Kodur V.
16:00-16:30	Coffee break + Poster session	
16:30-17:30	Compressed elements in fire	Kwasniewski L.
17:30-18:30	Connections in fire	Tan K.H.
19:30	Dinner	
21:00	Poster awards + Music evening	



Photo

+

Lunch

+

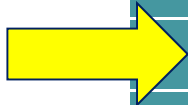
Poster session



Next session starts at 14:00

Program

	Panel topic	Moderator
8:00-8:30	Opening + Poster session	
8:30-9:30	Case study	De La Quintana J.
9:30-10:30	Latest development in fire testing	Outinen J.
10:30-11:00	Coffee break + Poster session	
11:00-12:00	Current stage of fire modelling	Rein G.
12:00-13:00	Advanced materials	Zaharia R.
13:00-14:00	Photo + Lunch + Poster session	
14:00-15:00	Simple elemental modelling	Vila Real P.
15:00-16:00	Advanced mechanical modelling	Kodur V.
16:00-16:30	Coffee break + Poster session	
16:30-17:30	Compressed elements in fire	Kwasniewski L.
17:30-18:30	Connections in fire	Tan K.H.
19:30	Dinner	
21:00	Poster awards + Music evening	






Development of simple elemental modelling

Moderator Vila Real P.

8:00-8:30	Hirashima T.	An approximation method for critical temperatures of steel members and horizontal displacements of columns
8:30-9:30		
9:30-10:30		
10:30-11:00	Vila Real P.	Modelling of multiple local fire and steel structure members response using software Elefir-EN
11:00-12:00		
12:00-13:00	Čajka R.	Study of slab fire resistance according to eurocode using different computational methods
13:00-14:00		
14:00-15:00	Vargovsky K.	Software applications for estimation of fire resistance of building structure
15:00-16:00		
16:00-16:30		
16:30-17:30	Zaharia R.	Simplified method for temperature distribution in slim floor beams
17:30-18:30		
	Štefan R.	Fire design of concrete and masonry structures: software tools
19:30		
21:00	Franssen J.-M.	Distribution of temperature in steel and composite beams and joints under natural fire

Program

	Panel topic	Moderator
8:00-8:30	Opening + Poster session	
8:30-9:30	Case study	De La Quintana J.
9:30-10:30	Latest development in fire testing	Outinen J.
10:30-11:00	Coffee break + Poster session	
11:00-12:00	Current stage of fire modelling	Rein G.
12:00-13:00	Advanced materials	Zaharia R.
13:00-14:00	Photo + Lunch + Poster session	
14:00-15:00	Simple elemental modelling	Vila Real P.
 15:00-16:00	Advanced mechanical modelling	Kodur V.
16:00-16:30	Coffee break + Poster session	
16:30-17:30	Compressed elements in fire	Kwasniewski L.
17:30-18:30	Connections in fire	Tan K.H.
19:30		Dinner
21:00	Poster awards + Music evening	



Development of advanced mechanical modelling

Moderator Kodur V.

8:00-8:30

8:30-9:30

9:30-10:30

10:30-11:00

11:00-12:00

12:00-13:00

13:00-14:00

14:00-15:00

15:00-16:00

16:00-16:30

16:30-17:30

17:30-18:30

19:30

21:00

Van Coile r.	Probabilistic analysis of concrete beams during fire
Lazarov L.	RC frame exposed to fire after earthquake
Ab Kadir M.A.	Modelling of reinforced concrete frames in fire following an earthquake
Annerel E.	Techniques for the evaluation of concrete structures after fire
Jiang J.	Numerical analysis of structures in fire using opensees
Jiang Y.	Development of heat transfer modelling capability in opensees for structures in fire
Kodur V.	A macroscopic finite element based computer model of FRP-strengthened reinforced concrete beams
Lilliu G.	Fire analysis of RC precast segmental tunnels

Program

	Panel topic	Moderator
8:00-8:30	Opening + Poster session	
8:30-9:30	Case study	De La Quintana J.
9:30-10:30	Latest development in fire testing	Outinen J.
10:30-11:00	Coffee break + Poster session	
11:00-12:00	Current stage of fire modelling	Rein G.
12:00-13:00	Advanced materials	Zaharia R.
13:00-14:00	Photo + Lunch + Poster session	
14:00-15:00	Simple elemental modelling	Vila Real P.
15:00-16:00	Advanced mechanical modelling	Kodur V.
16:00-16:30	Coffee break + Poster session	
16:30-17:30	Compressed elements in fire	Kwasniewski L.
17:30-18:30	Connections in fire	Tan K.H.
19:30	Dinner	
21:00	Poster awards + Music evening	



Coffee Break
+
Poster session

Next session starts at 16:30



Program


	Panel topic	Moderator
8:00-8:30	Opening + Poster session	
8:30-9:30	Case study	De La Quintana J.
9:30-10:30	Latest development in fire testing	Outinen J.
10:30-11:00	Coffee break + Poster session	
11:00-12:00	Current stage of fire modelling	Rein G.
12:00-13:00	Advanced materials	Zaharia R.
13:00-14:00	Photo + Lunch + Poster session	
14:00-15:00	Simple elemental modelling	Vila Real P.
15:00-16:00	Advanced mechanical modelling	Kodur V.
16:00-16:30	Coffee break + Poster session	
16:30-17:30	Compressed elements in fire	Kwasniewski L.
17:30-18:30	Connections in fire	Tan K.H.
19:30	Dinner	
21:00	Poster awards + Music evening	





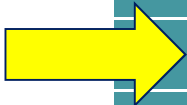
Latest knowledge in compressed elements in fire

Moderator Kwasniewski L.

8:00-8:30	Sokol Z.	Temperature of steel columns exposed to localised fire
8:30-9:30		
9:30-10:30	Sun R.	Behaviour of frame columns in localised fires
10:30-11:00		
11:00-12:00	Tsalikis C.T.	Elastic buckling of steel columns under thermal gradient
12:00-13:00		
13:00-14:00	Kwasniewski L.	Coupled structural-thermal calculations for restrained steel columns in fire
14:00-15:00		
15:00-16:00	Lu L.	Influence of transient strain on fire resistance of concrete elements
16:00-16:30		
 16:30-17:30	Nguyen T.T.	A rational approach to fire resistance analysis of RC columns subjected to uniaxial/biaxial bending and axial restraint
17:30-18:30		
19:30	Cvetkovska M.	Axial restraint effects of fire resistance of statically indeterminate RC beams
21:00		
	Hadjisophocleous G.	Fire modelling of axially-restrained tubular steel beams

Program

	Panel topic	Moderator
8:00-8:30	Opening + Poster session	
8:30-9:30	Case study	De La Quintana J.
9:30-10:30	Latest development in fire testing	Outinen J.
10:30-11:00	Coffee break + Poster session	
11:00-12:00	Current stage of fire modelling	Rein G.
12:00-13:00	Advanced materials	Zaharia R.
13:00-14:00	Photo + Lunch + Poster session	
14:00-15:00	Simple elemental modelling	Vila Real P.
15:00-16:00	Advanced mechanical modelling	Kodur V.
16:00-16:30	Coffee break + Poster session	
16:30-17:30	Compressed elements in fire	Kwasniewski L.
17:30-18:30	Connections in fire	Tan K.H.
19:30	Dinner	
21:00	Poster awards + Music evening	





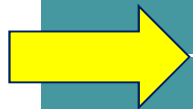
Application of latest models of connections in fire

Moderator Tan K.H.

8:00-8:30	Tan K.H.	Influence of semi-rigid joint moment-rotation characteristics on the behaviour of composite steel-framed structures
8:30-9:30		
9:30-10:30		
10:30-11:00	Dong G.	Component-based element for endplate connections in fire
11:00-12:00		
12:00-13:00	Yu H.	The fractural behaviour of steel welds at high temperature
13:00-14:00		
14:00-15:00	Qiang X.	Numerical analysis of HSS endplate connections at ambient and elevated temperatures
15:00-16:00		
16:00-16:30	Kirsch T.	Fracture simulation of a flush endplate connection at fire
16:30-17:30		
17:30-18:30	Kalogeropoulos A.	Finite element analysis of bolted steel connections using contact mechanics
19:30	Taib M.	A component-based model for fin-plate connections in fire
21:00	Haremza C.	Behaviour of heated composite joints: Preliminary numerical studies

Program

	Panel topic	Moderator
8:00-8:30	Opening + Poster session	
8:30-9:30	Case study	De La Quintana J.
9:30-10:30	Latest development in fire testing	Outinen J.
10:30-11:00	Coffee break + Poster session	
11:00-12:00	Current stage of fire modelling	Rein G.
12:00-13:00	Advanced materials	Zaharia R.
13:00-14:00	Photo + Lunch + Poster session	
14:00-15:00	Simple elemental modelling	Vila Real P.
15:00-16:00	Advanced mechanical modelling	Kodur V.
16:00-16:30	Coffee break + Poster session	
16:30-17:30	Compressed elements in fire	Kwasniewski L.
17:30-18:30	Connections in fire	Tan K.H.
19:30	Dinner	
21:00	Poster awards + Music evening	



URL: <http://fire.fsv.cvut.cz/ASFЕ/index.htm>





APPLICATIONS OF STRUCTURAL FIRE ENGINEERING



Organised in frame of COST Action
Integrated Fire Engineering and Response