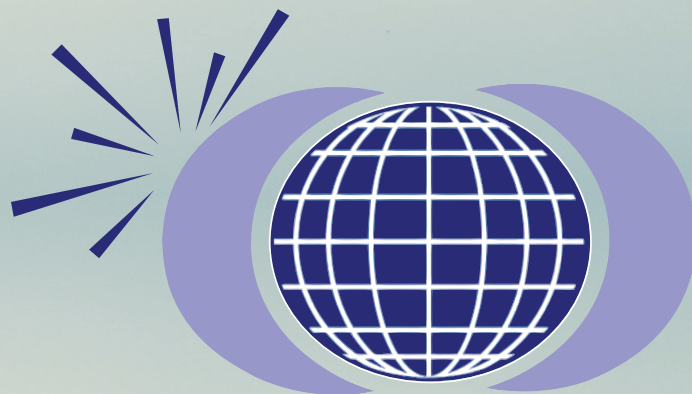




ICDERS 2025

**30e Colloque International sur la
Dynamique des Explosions et des
Systèmes Réactifs**

**30th International Colloquium on the
Dynamics of Explosions and Reactive
Systems**

27 juillet - 1er août
July 27 - August 1



uOttawa



30th International Colloquium on the Dynamics of Explosions and Reactive Systems

University of Ottawa, Ottawa, Canada

July 27 – August 1, 2025

ICDERS 2025

organized by the University of Ottawa and the Institute for the Dynamics of Explosions and Reactive Systems.

Welcome to the Proceedings of the 30th International Colloquium on the Dynamics of Explosions and Reactive Systems. Following the well established tradition of Colloquia in Brussels (1967), Novosibirsk (1969), Marseilles (1971), San Diego (1973), Bourges (1975), Stockholm (1977), Göttingen (1979), Minsk (1981), Poitiers (1983), Berkeley (1985), Warsaw (1987), Ann Arbor (1989), Nagoya (1991), Coimbra (1993), Boulder (1995), Cracow (1997), Heidelberg (1999), Seattle (2001), Hakone (2003), Montréal (2005), Poitiers (2007), Belarus (2009), Irvine (2011), Taipei (2013), Leeds (2015), Boston (2017), Beijing (2019), Naples (2022) and Seoul (2023), this Colloquium provides an international forum for reporting recent advances in experimental investigation, numerical and mathematical modeling of explosions and reactive systems.

Submissions were invited in the main areas of interest to this colloquium, namely the dynamics of deflagration and detonation waves. Four speakers were invited to deliver plenary lectures:

- Prof. Kareem Ahmed, University of Central Florida, "Detonations from hypersonic propulsion engines to exploding stars"
- Dr. Pascale Domingo, CORIA-CNRS, "Fast and capricious: combustion at high speed"
- Prof. Aamir Farooq, KAUST, "New perspectives on multi-mode and multi-scale shockwave dynamics"
- Dr. Andrzej Pekalski, Shell U.K., "Learnings and advancements in understanding Vapour cloud explosions since Buncefield accident"

Special sessions with invited speakers were organized, as follows:

- Role of non-equilibrium effects in detonation waves (Prof. Xian Shi)
- Liquid phase detonations (Prof. Hai Wang)
- Diffusive processes in gaseous detonations (Prof. Matei Radulescu)

The extended abstracts of papers presented at the colloquium are published on the web as the Proceedings of the 30th ICDERS, 2025. Authors of papers presented at this meeting are encouraged to submit full-length versions to one of these journals: *Combustion Science and Technology* and *Shock Waves*, as part of a special issue. Submitted manuscripts will be peer reviewed according to individual journal standards.

Without the able support of the University of Ottawa staff (Jennifer Marie Stewart, Jennifer Stefanopoulos and Daniela Gutiérrez de Piñeres from the event management team, Martine Bertrand-Bourgeois and Annie Trottier from the Faculty of Engineering) and the leadership of Dr. Farzane Zangene managing the conference organization and the group of student volunteers from the University of Ottawa, Queen's University, the Royal Military College of Canada and the National Research Council, the Colloquium and the production of the Proceedings would not have been possible.

We acknowledge the financial support of the Air Force Office of Scientific Research, Shell, FM Global, BakerRisk, Rembe and the Los Alamos National Laboratory.

Matei Radulescu
Chair of the Host Committee, 30th ICDERS

Ashwin Chinnayya
Chair of the Program Committee, 30th ICDERS

Host Committee

Matei I. Radulescu (Chair), Brian Maxwell, James McDonald, Farzane Zangene, Gaby Ciccarelli, Jackson Crane, She-Ming Lau-Chapdelaine, Patricio Vena

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Monday 28 July					
8:30	Welcome from the organizers C140 Martine Lagacé - Associate Vice President, Research Promotion and Development at University of Ottawa Matei Radulescu - Chair of Host Committee Ashwin Chinnayya - Chair of Program Committee Eric Petersen - President of IDERS				
9:00	Plenary Lecture C140 Detonations from hypersonic propulsion engines to exploding stars Kareem Ahmed, University of Central Florida, USA Chair: H. Wang				
10:00	Coffee break - 20 minutes				
	C309	C307	C140	C308	C240
	Low carbon fuels 1 Chairs: K. Maruta, T. Boushaki	Ignition 1 - shock tubes Chairs: N. Chaumeix, S. Cooper	Models - stability Chairs: S. Jackson, S. Lau-Chapdelaine	DDT 1 Chairs: N. Tsuboi, K. Chatelain	Detonation Engine 1 - injection Chairs: J. Y. Choi, K. Ishii
10:20	Visualization of internal structural changes during transient pyrolysis of wood containing ammonium nitrate (14) T. Daitoku*, T. Tsuruda, T. Kinugasa	Challenges associated with shock-tube ignition experiments in undiluted oxygen environments (44) M. Sandberg*, E. Petersen	News from the Chapman-Jouguet detonation front: a velocity-entropy invariance theorem (172) P. Vidal*, R. Zitoun	Transition to detonation due to shock focusing in C ₂ H ₆ -air mixtures (28) W. Rudy*, A. Pekalski	High-speed Schlieren imaging of rotating detonation engine fuel injection during operation (58) M. Stocke*, T. Wanstall, B. Sell, J. Hoke, M. Fotia
10:45	Experimental study on the effects of turbulence and ambient composition on butanol droplet evaporation (57) P. Cheung, A. Arabkhalaj, M. Birouk*	Large eddy simulations of remote ignition in methane/air mixtures behind reflected shock waves (204) T.A. Kashif*, J. Subburaj, A. Farooq	Effect of curvature on the neutral stability boundary for cellular gaseous detonations (264) M. Short*, S. Voelkel, C. Chiquete	Flame morphology during acceleration in unobstructed channels: effect of fundamental combustion properties (61) C. Mejia-Botero, J. Melguizo-Gavilanes*, L.F. Figueira da Silva, F. Viot	Design of a premixed rotating detonation engine with a porous injector (60) Y. Koyama*, N. Suto, K. Matsuoka, N. Itouyama, A. Kawasaki, H. Watanabe, J. Kasahara, M. Yasui, Y. Ide
11:10	Effects of equivalence ratio on the fire characteristics of hydroprocessed esters and fatty acids derived sustainable aviation fuel for aeronautical application (108) A.M. Raji*, B. Manescau, K. Chetehouna, L. Lamoot	Changes in ignition behavior of aged fuels and lubricants behind reflected shock waves (134) R. Juarez*, A. Lira, M. Abulail, E. L. Petersen	Stabilizing effects of real gas for cellular detonations (12) Z. Weng, R. Mevel*, Z. Ren, S. Shuai	Suppression of deflagration-to-detonation transition by sintered wire mesh (67) K. Kashiro*, K. Ishii	Experimental research of the effect of the slit on the coupled rotating detonation engine (91) A. Nakama*, S. Inamori, Y. Ide, N. Itouyama, K. Matsuoka, M. Yasui, J. Kasahara, A. Matsuo, I. Funaki, H. Tanno
11:35	Thermal properties of some african tropical woods: okoume, bilinga, movingui, ozigo and nove and their potential as biofuel feedstocks (109) A.M. Raji*, B. Manescau, K. Chetehouna, S. Ekomy Ango	Ignition behavior of hydrogen in the presence of lube oil behind reflected shock waves (209) M. Adil*, J. Subburaj, T. Kashif, F. T. Hong, E. Cenker, A. S. Ramadan, A. Farooq	Decay of shock perturbations: a geometrical shock dynamics study (267) A. Sow*, Y. Amor, M. I. Radulescu	Fast-flame to detonation transition in a round tube (207) M. Moran*, G. Ciccarelli	Effect of injector arrangement in disk-type rotating detonation engine (270) M. Mizota*, S. Yamazaki, S. Matsuzono, E. Dzieminska, M. Kawalec
12:00	Lunch - 1.5 hours				
	Propellants 1 Chairs: X. Mi, J. Yoh	Optical diagnostics - kinetics 1 Chairs: A. Farooq	Liquid phase detonation 1 Chairs: H. Wang, K. Ahmed	DDT 2 Chairs: R. Mével, B. Maxwell	Detonation engine 2 - disk shape Chairs: M. Kawalec, L. Angelili
13:30	Effects of an Fe-based MOF additive on the burning rate of AP/HTPB composite propellants (43) T. Swindell, J. D. Pantoya*, T. E. Sammet, E. Petersen	Towards the development of an IR spectra-based approach for characterizing fuel combustion behavior (19) P. Biswas*, V. Boddapati, A. Klingberg, H. Wang, R. K. Hanson	A 1D Lagrangian scheme on NASG stiffened medium model with varying cross-section area (188) W. Wang*, M. I. Radulescu	The influence of nitrogen dilution level in stoichiometric H ₂ -O ₂ mixture on the transition to detonation in a 90-deg wedge (130) W. Rudy*, A. Teodorczyk	Effects of exhaust dilution in a disk-shaped pressure gain combustor (29) A. Lim*, P. H. Chua, X. Huang, P.-H. Chang, Z. W. Teo, J.-M. Li, C. J. Teo, B. C. Khoo
13:55	Influence of Triphenylphosphine-Coated Aluminum Nanoparticles on the Combustion Dynamics of Al/CuO Nanothermites Mesh in Confined Spaces (129) X.-R. Lu, M.-H. Wu*, Y.-S. Cheng, C.-W. Huang	Laser Absorption Measurements of H ³⁵ Cl in a Shock Tube for Investigating the Chemical Kinetics of Rocket Propellants (31) C. Gregoire*, E. L. Petersen	Decane droplet combustion onset in air behind a Mach 5.3 shock wave (201) F. Viot*, A. Claverie	Detonation propagation over a surface of water in oxyhydrogen mixture (146) S. K. Mall, E. Dzieminska, A. Koichi Hayashi, I. Nakamori, T. Tomizuka, A. Takahashi, F. Onishi, T. Kodama, N. Sato, N. Tsuboi, S. Numao, S. Yoshimura, T. Suzuki	Experimental investigation of the effects of geometry on the performance characteristics of the disk-shaped pressure gain combustor (30) P.H. Chua*, A. Lim; Z.W.A. Teo, X. Huang, J.-M. Li, C.J. Teo, B.C. Khoo

Monday 28 July					
	C309	C307	C140	C308	C240
14:20	Laser ignition of Al-MoO ₃ thermites (245) <i>S. Riel*, A. Higgins, F. Kelly, J. Loiseau</i>	Experimental investigation of liquid fuel autoignition: insights from advanced optical diagnostics (159) <i>C. Fouchier*, J. Shepherd</i>	Shock-induced breakup of liquid fuel jet: a coupled momentum and energy transfer theory (223) <i>A. Jayaraman*, N. Kateris, E. Genter, H. Wang</i>	The role of perturbations on the shock-flame complex leading to detonation (205) <i>S. Miri*, K. Cheevers, H. Yang, R. Murugesan, V. Premnath, D. Rajagopalan Kannan, J. Jeevarajan, B. Maxwell, M. Radulescu</i>	Symmetric square lattice injector pattern design and testing for a bi-propellant rotating detonation engine (142) <i>V. Joseph*, J. Kasahara, K. Matsuoka, N. Itouyama, M. Yasui, Y. Ide, A. Matsuo, I. Funaki, K. Higashino</i>
14:45	Effect of metal and metal hydride additives on combustion characteristics of composite solid propellants (144) <i>R. K. Deepachanthiran*, K. Gnanaprakash</i>	Ignition delay time and multi-speciation measurements of ammonia/C ₁ mixtures in shock tube (103) <i>N. Farzana*, H. Karas, M. Li, B. Shu, R. Fernandes, S. Agarwal, D. Zhu</i>	Unsteady effects on pathological droplet-fueled detonations (233) <i>R. Hernández Sánchez*, J. Carpio Huertas, D. Martínez Ruiz, C. Huete</i>	DDT induction distance measurements for methane/hydrogen/oxygen (211) <i>T. Elia*, G. Ciccarelli</i>	Operational characteristics and performance of the disk-RDRE (183) <i>K.-H. Lee*, M.-S. Jo, G.-U. Mo, S.-W. Choi, B.-K. Sung, J.-Y. Choi</i>
15:10	Coffee break - 20 minutes				
	Carbon free fuels - metals Chairs: <i>A. Higgins, J. Oh</i>	Ignition 2 - characteristics Chairs: <i>G. Dayma, O. Mathieu</i>	Liquid phase detonation 2 Chairs: <i>H. Wang, K. Ahmed</i>	Explosions Chairs: <i>T. Skjold, L. Boeck</i>	Detonation engine 3 - cooling and heat transfer Chairs: <i>E. Dzieminska, R. Burke</i>
15:30	Ignition mechanisms of aluminum particles in hydrocarbon products (45) <i>D. Keo*, P. Graumer, C. Chauveau, S. Courtiaud, F. Halter</i>	Numerical studies on minimum ignition energies of lean primary reference fuels at elevated pressure (136) <i>C. Wu*, R. Schießl, U. Maas</i>	Detonability and propagation limits of spray detonations in jet fuel-air mixtures (33) <i>S.S. Dammati*, A. Poludnenko</i>	Background oriented Schlieren measurements for pressure relief systems in the free field (6) <i>M. Gerbeit*, H. Seeber, D. Grasse, M. Donner, D. Krentel</i>	Experimental study of heat transfer to thin wall in water-cooled cylindrical rotating detonation engine (92) <i>S. Inamori*, A. Nakamori, Y. Ide, N. Itouyama, K. Matsuoka, M. Yasui, J. Kasahara, A. Matsuo, I. Funaki, K. Higashino</i>
15:55	In-situ measurement of spectral emissivity of aluminum flame combustion products using saturated atomic lines (82) <i>E. Antar*, C. Wong, C. Heng, N. Chepel, S. Goroshin, J. Bergthorson</i>	Sustainable aviation fuels vs. Jet A1: experimental insights into laminar burning velocity and minimum ignition energy (152) <i>N. Hamamousse*, E. Brodu, C. Strozzi, B. Boust, J. Sotton, M. Bellenoue, C. Viguier</i>	Hydrodynamic droplet breakup modeling in liquid-fueled detonations (113) <i>S. Agee, M. Paudel, P. Ramaprabhu, J. McFarland*</i>	PDRFoam performance for flame acceleration in congested quiescent clouds (200) <i>J. Melguizo-Gavilanes*, A. Pekalski</i>	Film cooling implementation in micro rotating detonation combustor (101) <i>M. Tagliaferri*, A. Picchi, M. Polanka, A. Andreini, B. Facchini</i>
16:20	Characterization of the impact of oxygen concentration on the alumina cloud surrounding a burning aluminum droplet (90) <i>H. Keck*, C. Chauveau, G. Legros, S. Gallier, F. Halter, G. Dayma</i>	Experiments on ignition delay and low limit boundary for RP-3 kerosene (194) <i>S. Xu*, E. Liu, L. Zhang</i>	Theory and canonical experiment development for strong shock-induced droplet drag and vaporization (115) <i>N. Kateris*, E. Genter, A. Jayaraman, H. Wang</i>	Explosive characteristics of a typical Li-ion battery vent gases with inert gas addition (195) <i>A. Lindalen*, D. Bjerketvedt, M. Henriksen</i>	Impact of heat transfer on a 1 inch rotating detonation rocket engine (213) <i>D. Ramesh*, P. Meagher, X. Zhao</i>
16:45	Silicon energetic dust particles as carbon-free energy carriers (97) <i>H. Heng*, C. Mani, N. Chepel, K. Mangalvedhe, E. Antar, S. Goroshin, J. Bergthorson</i>	Study on the combustion characteristics of high temperature activation gas-solid binary fuel (169) <i>H. Wang*, G. Song, W. Song</i>	Experimental investigation of fuel droplet size effects on liquid cloud detonations (117) <i>T. Brown, R. Hytovick, K. Ahmed*</i>	Experimental and modeling study on the thermal response of vertical storage tanks with different filling levels (37) <i>X. Yu*, J. Bai, C. Zhu, R. Zong</i>	
17:10	Effect of heating process on the ignition behavior of fine iron particles—a theoretical analysis (112) <i>X. Mi*</i>		A real liquid Volume-of-Fluid framework with evaporation dynamics (187) <i>L. Angelilli*, V. Raman</i>		
			Short discussion session: 15 min		
18:30	Early Career Researcher Night at MacLaren's on Elgin				

Tuesday 29 July					
8:30	Plenary Lecture C140 Fast and capricious: combustion at high speed <i>Pascale Domingo, CORIA-CNRS, France</i> Chair: A. Chinnayya				
9:30	Coffee break - 20 minutes				
	C309	C307	C140	C308	C240
	Low carbon fuels 2 Chairs: K. Maruta, M.-H. Wu	Kinetics modeling 2 Chairs: G. Dayma, P. Dievart	Narrow detonations Chairs: G. Ciccarelli, M. D. Frederick	DDT 3 Chairs: Y. Morii, C. R. Bauwens	Detonation engine 4 - numerical Chairs: S. Lau-Chapdelaine, H. Watanabe
9:50	Experimental investigation on biogas flame stability in laboratory coaxial burners and gas stoves (165) M. Hassene, Y. Jery, B. Sarh, A.A. Yontar, H. H. El Bari, T. Boushaki*	Reaction-diffusion manifolds (REDIMs) - gradient embedding approach (176) S. Shashidharan*, R. Schiessl, V. Bykov, U. Maas	Delayed autoignition in propagating detonations (263) L. Berson*, R. Hytovich, R. Cideme, K. Ahmed	Detonation initiation regimes of shock-flame complexes in fuel blends of hydrogen and methane (154) R. Murugesan*, S. Miri, H. Yang, K. Cheevers, V. Premnath, D.R. Kannan, J. Jeevarajan, M. Radulescu, B. Maxwell	Characterization of methane/cryogenic oxygen non-premixed rotating detonation (39) Q. Meng, C. Wen*
10:15	Experimental CO time-history study of the pyrolysis of pentan-1-ol, neopentanol and 2-methylbutan-1-ol in a shock tube (242) M. Khan-Ghauri*, C. Gregoire, Z. Serinyel, O. Clement, G. Dayma, M. Di Teodoro, S. N. Elliott, C. Cavallotti, O. Mathieu, E. Petersen	Kinetics of soot formation from benzene pyrolysis (132) T. Viola*, L. Carneiro, M. Idir, N. Chaumeix, A. Comandini	Lean detonability of hydrogen-oxygen mixtures in narrow channels (216) T. Westenhofer*, B. Devine, X. Shi	Collision modes of constant-speed planar auto-ignition waves (236) L. Bonneau, V. Robin*, A. Chinnayya	3D numerical simulation on disk type rde used hydrogen-air premixed gas and non-premixed gas with multi-ports injection: relation between injection mode and flame index (69) T. Ito*, N. Tsuboi, K. Ozawa, A.K. Hayashi
10:40	Gasification of Argan nut shell biomass in throated downdraft gasifier: Shapes of syngas laminar jet diffusion flame (265) B. Sarh*, Y. Rahib, V. Belandria, T. Boushaki	An experimental and kinetic modeling approach to a martian fuel combustion (77) N. Amirov, Z. Serinyel, F. Halter, F. Foucher, G. Dayma*	Experimental study of hydrogen detonations in coaxial channels (71) A. Poyet*, H. Watanabe, V. Rodriguez, A. Chinnayya	Computational investigation of flame acceleration and transition to detonation (250) N. Dexter-Brown*, J. Jayachandran	Adaptive mesh refinement based simulation of a three-dimensional methane-oxygen rotating detonation rocket engine (83) M. Powers*, S. Sharma, V. Raman
11:05	Pyrolysis of large biomass particles: model validation and application to coffee husks valorization (157) M.M. Afessa*, A. Locaspi, P. Debiagi, A. Frassoldati, R. Caraccio, A.V. Ramayya, T. Faravelli	N ₂ O laser absorption measurements during toluene/N ₂ O combustion (46) O. Mathieu*, A. Bhattacharya, C. M. Grégoire, E. L. Petersen	Propagation limits of cellular detonation in narrow channels (256) B. Devine*, T. Westenhofer, X. Shi	Numerical study on hydrogen/air DDT in a large scale channel: physical and chemical models and initial and boundary conditions (269) A.K. Hayashi*, I. Nakamori, T. Tomizuka, A. Takahashi, F. Onishi, M. Kuznetsov, T. Kodama, Y. Tamauchi, N. Sato, N. Tsuboi	Wave structures in simulated 25 mm rotating detonation rocket engines (87) M. Ross*, J. Burr
11:30		Sensitivity of reaction-diffusion manifolds (redims) with respect to gradient estimates and boundary conditions (147) U. Maas, V. Bykov*	Scaling analysis of gaseous detonation limits in tubes (189) X. Zhang, M. Zeng, A. Chinnayya, W. Fan, Q. Xiao		Numerical study of rotating detonation combustor with backward facing step (10) Q. Sun*, Y. Hou, J. Wang
11:55	Lunch - 1.5 hours				
	Propellants 2 Chairs: T. Katsumi, J. Yoh	Flame front structure and instabilities 1 Chairs: L. Vervisch, B. Savard	Diffusive effects in detonations 1 Chairs: M. I. Radulescu, A. Chinnayya	DDT 4 Chairs: G. Ciccarelli, M. Alicherif	Detonation engine 5 - numerical Chairs: A. Matsuo, E. Dzieminska
13:25	Reaction propagation in fumed silica gelled HAN-based propellants (191) Y.-J. Chen, I.-Y. Tsai, P.-F. Yang, M.-H. Wu*	spatially resolved measurements of 3D cellular structure of premixed H ₂ /O ₂ /N ₂ flames on a porous-plug burner (104) Z. Yan, X. Nie, S. Wang*	The mean pressure evolution in detonation cells (259) M.I. Radulescu*, F. Zangene	Modeling of Flame Acceleration and DDT in open-ended channel with homogeneous premixed H ₂ -air mixture (150) P. Bosnic*, M. Henriksen, D. Bjerketvedt, K. Vaagsaether	Detonation wave velocity error calculation and comparison of methods (78) R. Hencel*, J. Hoke, M. Fotia

Tuesday 29 July					
	C309	C307	C140	C308	C240
13:50	Combustion modeling of aluminum-enriched propellants using a surface tension SPH model (68) <i>H.-S. Choi*, R. Rajak, J.J. Yoh</i>	Three-dimensional visualization of flame-vortex entrainment in hydrogen/methane air mixtures (228) <i>S. Kia*, K. Cheevers, C. R. L. Bauwens, M. I. Radulescu</i>	Heat loss effects on thin-channel detonation propagation in hydrogen-oxygen-argon mixtures (114) <i>B. Maxwell*, C. Schmitt, J. Smith</i>	Effect of numerical flame resolution on the acceleration history of a premixed hydrogen-oxygen flame transitioning to detonation (196) <i>T. Alzer*, J. Melguizo-Gavilanes, I. Wlokas, A. Kempf</i>	Numerical study on an euler-euler model for liquid-gas two-phase detonation in n-heptane/air mixture (168) <i>H. Park*, N. Tsuboi, A.K. Hayashi</i>
14:15	Performance parameter estimation of hybrid rocket with varying concentration of hydrogen peroxide (258) <i>V.K. Rathi*, R. Kumar</i>		A DNS study of detonation-turbulence interaction using massless tracer particles: effects of turbulent Reynolds number (116) <i>S. Suzuki, K. Iwata, R. Kai, R. Kurose</i>	Deflagration-to-detonation transition in a gradient of atomic species formed by pulsed nanosecond plasma (219) <i>V. Lafaurie*, S. Starikovskaia, P. Vidal</i>	LES study of combustion dynamics and NOx emissions in a full-scale hydrogen-air rotating detonation engine (192) <i>P. Pal*, P. Strakey, D. Ferguson</i>
14:40	Burning characteristics of aluminium-magnesium blended hydro-reactive solid propellants (199) <i>P. Jain, R. K. Deepachanthiran, K. Gnanaprakash*</i>		Role of the turbulent burning in the quenching limits of gaseous detonation confined by an inert compressible layer (118) <i>H. Watanabe*, V. Robin, A. Chinnayya</i>	Effect of flow divergence on the structure of detonation in rich H ₂ -NO ₂ /N ₂ O ₄ Mixtures (229) <i>B. Shirvani*, Z. Ni, F. Veiga-Lopez, B. Maxwell, R. Mevel, J. Luche, P. Vidal</i>	
15:05	Coffee break - 20 minutes				
	Propellants 3 Chairs: <i>X. Mi, J. Oh</i>	Flame propagation 1 Chairs: <i>M. Henriksen, Y.-C. Chien</i>	Diffusive effects in detonations 2 Chairs: <i>M. I. Radulescu, A. Chinnayya</i>	DDT 5 Chairs: <i>S. Maeda, J. Melguizo-Gavilanes</i>	Detonation engine 6 - experiments Chairs: <i>J. Kasahara, N. Tsuboi</i>
15:25	Blast wave formation during ballistic impact of consolidated metal powder projectiles (227) <i>J. Tubman*, D. Idrici, V. Muckensturm, S. Goroshin, D. Frost, J. Loiseau</i>	Effect of pressure on the high-temperature flame propagation of ammonia/hydrogen blends (9) <i>M. Figueroa Labastida*, L. Zheng, L. Simitz, R. K. Hanson</i>	Towards the large-scale modeling of turbulent combustion in fast deflagrations (122) <i>O. Dounia*, Q. Douasbin, T. Jaravel, J.-J. Hok, F. Meziat, O. Vermorel</i>	Numerical investigation of DDT process in a channel with grooves (145) <i>H. Shiga*, E. Dzieminska, W. Bing, N. Tsuboi</i>	Rotating detonation rocket engine operation in 10-mm and 25-mm coreless combustors (123) <i>C. Knowlen*, T. Mundt, Q. Roberts, M. Kurosaka</i>
15:50	Using magnetic nano ferrites to alter the ignition time delay of shellac-based pyrotechnic igniter (249) <i>L. Bansal*, M. Naagar, A. Thakur</i>	Real gas effects on ammonia-oxygen laminar flame speed (11) <i>F. Veiga-Lopez, Z. Weng, R. Mevel*, G. Wang</i>	Experimental observations on the reaction of unburned pockets (153) <i>M. Frederick*, J. Shepherd, C. Slabaugh</i>	Experimental analysis of the effect of initial conditions on spontaneous detonation development mechanisms for a hydrogen/n-decane mixture (178) <i>R.N. Ezekwesili*, C. Strozzi, M. Bellenoue, M Bohon</i>	Experimental investigation of heat flux in a small-scale oxygen-hydrogen rotating detonation rocket combustor (177) <i>F. Ditsche*, J. Petersen, W. Armbruster, M. Börner, M. Propst, M. Tajmar, C. Bach</i>
16:15	Ignition characteristics of pyroelectric solid propellants containing perchlorate and nitrate based ionic oxidizers (138) <i>A. Mukhopadhyay, G. Kanagaraj*</i>	Cellular instabilities and laminar burning velocities of spherically expanding H ₂ /air flames doped with methane and diluted with water (163) <i>P. Dievart*, A. Zemba, A. Mousse Rayaleh, T. Katsumi, N. Chaumeix</i>	Role of viscosity in the detonation cell cycle (252) <i>P. Meagher*, X. Zhao</i>	Elucidating the mechanism of shock wave generation within a subsonic reaction wave through extension of zel'dovich's ignition front theory (248) <i>H. Okada*, Y. Morii, A. Tsunoda, K. Maruta</i>	Airbreathing kerosene-fueled detonation combustion chamber-comparison of different combustion modes (180) <i>M. Kawalec*, A. Bilar, K. Benkiewicz</i>
16:40	Numerical simulation study of the thermal response process of gap solid propellant under nozzle structural constraints (51) <i>J. Yang, H. Xia, X. Wang, S. Guo, Y. Wu*</i>	Measuring laminar flame speed of lubrication oil mist in air and CH ₄ -air mixtures (235) <i>J. Jacobs*, M. A. Turner, E. L. Petersen</i>	The burning mechanism of non-reacted pockets in cellular detonations (253) <i>F. Zangene*, M.I. Radulescu</i>	GPU-accelerated high-performance numerical simulation of detonation using detailed chemical kinetics (175) <i>X. Wang, Y. Zhang, Q. Wen, H. Wen, B. Wang</i>	
			Short discussion session: 15 min		

Wednesday 30 July					
	C309	C307	C140	C308	C240
	Carbon free fuels - ammonia 1 Chairs: <i>H. Nakamura, R.A. Schießl</i>	Turbulent combustion Chairs: <i>V. Robin, O. Dounia</i>	Detonation - numerical Chairs: <i>A. Matsuo, L. Angelilli</i>	Curved and divergent detonations Chairs: <i>H. D. Ng, A. Kawasaki</i>	Detonation engine 7 - numerical Chairs: <i>K. Matsuoka, M. Kawalec</i>
9:00	Laminar burning velocities of hydrogen and ammonia blends (193) <i>M. Herniksen*, J. A. Shin, D. Bjerketvedt</i>	Analytical model of transcritical diffusion flame in a turbulent coaxial jet (5) <i>A. Genot*, M. Bouton, L. Sanchez, H. Bezard</i>	A global 4-step combustion modelling strategy for hydrogen and blends of hydrogen and natural gas (161) <i>B Maxwell*, R. Murugesan, S. Miri, V. Premnath, D. R. Kannan, J. Jeevarajan</i>	Experimental and detonation-shock dynamics analyses of cellular detonations in diverging channels: the effects of the cross-sectional shape (53) <i>V. Monnier, V. Rodriguez*, P. Vidal, R. Zitoun</i>	Predictive model for rotating detonation engine wave structure (151) <i>R. Burke*, T. Rezzag</i>
9:25	High-pressure laminar flame speed measurements of an ammonia/hydrogen/nitrogen fuel blend (65) <i>U. L. Costa*, Y. Almarzooq, A. Hardaya, M. Hay, W. Kulatilaka, E. Petersen</i>	Experimental study of a transcritical LOx/CH ₄ swirl flame (7) <i>M. Bouton*, A. Nicole, N. Fdida, S. Boulal, L. Vingert, M. Théron, A. Genot, G. Ribert</i>	Propagation and structure of hybrid aluminum - hydrogen - air detonations: a computational approach (54) <i>S. Guhathakurta*</i>	Wave reflections and velocities generated by detonation propagation through circular arcs (102) <i>S. Jackson*, D. Lont, J. Martinez, M. Short</i>	Flow structure in idealized rotating detonation combustor with supersonic inflow (156) <i>R. Fernandez*, V. Raman</i>
9:50	Impact of detailed molecular transport on ammonia/hydrogen ignition delay time measurements in rapid compression machines (234) <i>C. Wu*, R. Schießl</i>	Large Eddy Simulation of a LOx/CH ₄ swirl flame under transcritical conditions (8) <i>M. Bouton*, A. Nicole, A. Genot, G. Ribert</i>	Numerical study of detonation propagating in hydrogen-nitrogen tetroxide mixtures (42) <i>Z. Ni, S. Gallier, R. Mevel*, G. Wang, B. Wang</i>	The effect of activation energy on gaseous detonation initiation and propagation in curved geometries (62) <i>C. Chiquete*, M. Short</i>	A model for multi-wave dynamics in a rotating detonation engine (197) <i>S. Snijders, X. Mi*, C. Renshaw-Whitman, C. Kiyanda, A. Higgins</i>
10:15	Study on end-gas auto-ignition and knock characteristics of ammonia-hydrogen blends over a wide-range equivalence ratios in a rapid compression machine (48) <i>Q. Zhang*, Z. Yang, R. Zhang, Y. Qi, Z. Wang</i>	Combustion explicitly filtered large-eddy simulation: a novel approach to multi-species LES (76) <i>A. Beroudiaux, L. Vervisch*, Q. Cerutti, P. Domingo, G. Ribert</i>	Numerical resolution requirements for narrow channel detonation simulations (21) <i>M. Martin*, A. S. Venkataraman, E. S. Oran, H. Farah</i>	Critical initiation of curved unsteady detonation in Noble-Abel and van der Waals Gas (13) <i>Z. Weng, R. Mevel*</i>	Effect of ozone addition on the detonation wave structure of ethylene-oxygen systems (243) <i>A. Karthik, A. Dahake, R.K. Singh, A. Vikram Singh*</i>
Coffee break - 20 minutes					
	Fire dynamics Chairs: <i>L. Boeck, C. R. Bauwens</i>	Flame propagation 2 Chairs: <i>C. Strozzi, C. Fouchier</i>	Detonation (re)initiation 1 Chairs: <i>R. Mével, V. Monnier</i>	Condensed-phase detonations Chairs: <i>P. Vidal, S. Courtiaud</i>	Detonation engine 8 Chairs: <i>K. Matsuoka, J.Y. Choi</i>
11:00	Experimental study on pool fire behavior and the ignition risk of unburnt gases in a reduced-scale chamber of chambord castle (164) <i>Z. Chen*, B. Manescau, K. Chetehouna, I. Sellami, L. Lamoot</i>	Simplified chemical reaction model and its application in flame acceleration and detonation (35) <i>Y. Sun*</i>	An experimental study of cellular detonations in gaseous dodecane/air mixtures (74) <i>L. Vilasi*, B. Le Naour, P. Vidal, V. Rodriguez</i>	Continuum modeling of 1-D and 2-D steady detonation wave propagation in porous high explosives (81) <i>J. Garo*, M. Short, S. Voelkel, C. Chiquete</i>	Impact of turbulence on wave propagation in a C ₂ H ₄ -O ₂ rotating detonation engine (226) <i>S. Connolly-Boutin*, E. Doyle, A. Côté, H. Fazal, A. Higgins, C. Kiyanda</i>
11:25	Experimental study on the laminar flame speed of hydrogen doped with trimethyl phosphate (217) <i>M. Nielsen*, U. Costa, J. Jacobs, O. Mathieu, E. Petersen</i>	Effect of preferential diffusion, activation energy and obstacles separation distance on the acceleration of premixed flames (137) <i>L. de Azevedo*, L. Fernandes, A. Mendiburu</i>	Geometric modeling of detonation propagation and re-initiation over obstacles (89) <i>R. Paknahad*, J. Crane</i>	The influence of high sound speed confinement on detonation propagation in high explosives (186) <i>M. Short*, C. Chiquete, S. Voelkel</i>	Effects of the injection inhomogeneity on the detonation propagation speed in a reflective shuttling detonation engine using gaseous fuel and oxidizer (246) <i>R. Sato*, H. Inoue, A. Kawasaki, K. Matsuoka, T. Nagaoka, Y. Oda, N. Itouyama, J. Kasahara, A. Matsuoka</i>

Wednesday 30 July					
		C307	C140	C308	
11:50		Flame acceleration mechanisms to detonation in an obstacle-laden tube: experiments and modelling (212) <i>K. Cheevers*, H. Yang, A. Pekalski, M. I. Radulescu</i>	Observation of detonation initiation by a high-speed spherical projectile using the diaphragmless method (131) <i>S. Maeda*, R. Sato, K. Suzuki, Y. Seki, T. Obara</i>	Axial detonation propagation in an annular cylinder of the TATB-based explosive PBX 9502 (174) <i>G. Montoya, M. Short*, E. Anderson, S. Voelkel</i>	
12:15		Numerical simulation of deflagration to detonation process using adaptive mesh refinement method in hydrogen/oxygen premixed gas mixture (198) <i>Y. Ryu*, N. Tsuboi, A. K., Hayashi, T. Obara, X.-M. Tang</i>	A numerical high-speed reacting flow model based on the AMReX frame (140) <i>Q. Wen, Y. Zhang, X. Wang, H. Wen, B. Wang</i>	Detonation performance of a high HMX-content polymer bonded explosive (182) <i>E. Anderson, S. Voelkel, M. Short*, R. Chicas, W. Chapman, C. Chiquete</i>	
12:40	Lunch - provided				
13:30 - 13:50	Buses leave for the excursion				

Thursday 31 July					
8:30	Plenary Lecture C140 New perspectives on multi-mode and multi-scale shockwave dynamics <i>Aamir Farooq, KAUST, Saudi Arabia</i> Chair: E. Petersen				
9:30	Coffee break - 20 minutes				
	C309	C307	C140	C308	C240
	Battery kinetics and safety Chairs: B. Savard, M. Henriksen	Flame behavior and instabilities Chairs: M. Figueroa-Labastida, J. Melguizo-Gavilanes	Non-equilibrium effects in detonations 1 Chairs: X. Shi, S. J. Voelkel	Detonation structure and inhibition Chairs: S. Maeda, F. Viot	Detonation engine 9 - oblique Chairs: K. Ishii, R. Burke
9:50	Understanding the thermochemical reactions of lithium and carbonate electrolytes at elevated temperatures (20) J. Oh*, M. Tang	Flame behavior in expanding flow (22) T. Tsuruda*, T. Daitoku, H. Osaka	Experimental assessment of thermal non-equilibrium (NEQ) in H ₂ -air detonations with emission spectroscopy (73) H. Bilal, K. Chatelain*, D. Lacoste	3D numerical simulation on shock front structure of hydrogen/air spinning detonation (202) H. Okuda*, N. Tsuboi, A.K. Hayashi	Numerical investigation of assisted initiation of oblique detonation waves by energy deposition (93) Z. Jiang, Z. Zhang*, Z. Chen, J. Hao, C.-Y. Wen
10:15	CO Time-history measurements and kinetic modeling of trimethyl phosphate pyrolysis (94) K. Kanayama*, C. Grégoire, K. Maruta, E. Petersen, O. Mathieu, H. Nakamura	Double shock-flame interactions and the induced flame instabilities (25) X. Zhang*, T. Shen, H. Xiao	Vibrational nonequilibrium modeling framework for high-speed combustion applications (84) S. Voelkel*, M. Short	Direct detonation initiation in dimethyl ether-oxygen-nitrogen-carbon dioxide mixtures: effect of low-temperature chemistry and ozone addition (55) Z. Huang, R. Mevel*	Boundary layer separation effects on viscous oblique detonations over compression corners (96) X. Shao, Z. Zhang*, J. Hao, C.-Y. Wen
10:40	Characterizing the safety of commercial sodium-ion cells and modules (98) D. R. R. Kannan*, V. Premnath, J. Jeevarajan, C. Lopez	Buoyancy limit and ascending velocity of lean syngas flames (148) Y. Ballossier*, A. Desclaux, M. Bouton, A. Bentaib, A. Comandini, N. Chaumeix	Idealized Detonation Modeling with Vibrational Nonequilibrium (85) S. Voelkel*, M. Short	Inhibition of hydrogen-air detonations using organophosphorus compounds (247) A. Dahake, R. K. Singh, A. S. Karthik, A. V. Singh*	Structure of conical oblique detonation waves at an angle of attack (210) S. Abisileman*, R. Bielawski, V. Raman
11:05	Understanding ignition mechanisms and improving temperature boundary condition for lithium-ion battery vent gas simulations (119) N. A. Senarathna*, M.-A. Bérubé, P. Versailles, E. Robert, B. Savard	Dynamics of acoustically-induced boundary-layer flashbacks in a dump combustor (170) J.-M. Klein*, A. Genot, A. Vincent-Randonnier, A. Mura	A temperature non-equilibrium reactive model for detonation hydrodynamics (206) W. Morin*, J. G. McDonald, M.I. Radulescu	Enhancing the lean detonability limit of hydrogen-oxygen detonations using ozone (220) R. Singh, A. Dahake, A. Karthik, A. Singh*	Influence of inert gas boundaries on detonation propagation (181) Y. Wahba*, X. Mi, C. Kiyanda, A. Higgins
11:30	Preventing battery thermal runaway via electro-thermal characterization using impedance spectrum (167) P. B. Singh*, J. J. Yoh		A molecular view of shock interactions and reflections with implications in gas-phase detonations (222) A. M. Jayaraman*, E. Genter, H. Wang	Formation conditions of double cellular detonation in C ₂ H ₄ /O ₂ /O ₃ /N ₂ mixtures with two-stage reactions (23) J. Sun*, Z. Chen	
11:55	Lunch - 1.5 hours				
	Carbon free fuels - ammonia 2 Chairs: H. Nakamura, L. Vervisch	Flame ignition Chairs: P. Domingo, W. Rudy	Non-equilibrium effects in detonations 2 Chairs: X. Shi, S. J. Voelkel	Detonation (re)initiation 2 Chairs: V. Rodriguez, F. Zangene	Ramjets and scramjets 1 Chairs: A. K. Hayashi, A. Higgins
13:25	Investigation of NH ₃ /CH ₄ flame structure and dynamics in a swirl turbulent non-premixed burner (40) A. Morel*, T. Boushaki	Hot gas kernel expansion shape caused by contact-break discharges on cadmium and zinc cathodes in a hydrogen-air mixture (66) D. Bratek*, C. Uber, E. Khan, B. Barbu, R. Methling	Non-equilibrium translational effects and the limits of weak detonations in shock-to-detonation transition (160) R. Murugesan*, M. I. Radulescu	Mechanisms of detonation re-initiation in a narrow channel at a back-facing step (185) Y. Poroshyna*, J. Loiseau, S. Lau-Chapdelaine, G. Ciccarelli	Numerical simulation of two-phase combustion in a scramjet (59) F. Kissel, G. Ribert*, P. Domingo
13:50	Experimental investigation of oxygen concentration effect on spherical turbulent flame propagation limits of ammonia-oxygen-nitrogen premixed flames (143) Y. Xia, N. Hashimoto, O. Fujita*	Effects of fuel nozzle geometry on the flammability limits of low-swirl biogas diffusion flames (155) S.C. Fabbro, M. Birouk*	Shocks in n-dodecane/nitrogen mixtures: a molecular dynamics study (225) E. Genter*, A. Jayaraman, A. Nobili, H. Wang	Controlling parameters for detonation re-initiation after interaction with cylinders in hydrogen and hydrocarbon mixtures (262) H. Yang*, M. I. Radulescu	Study of a rotating detonation torch for scramjet engines (95) M. Kakuda*, K. Norimatsu, S. Suzuki, S. Nishiura, N. Katsumura, N. Itouyama, K. Matsuoka, J. Kasahara, T. Kudo, A. Hayakawa, K. Kobayashi, S. Tomioka

Thursday 31 July					
	C309	C307	C140	C308	C240
14:15	Reduced chemistry and differential diffusion effects in simulations of ammonia-hydrogen fuel blend (75) <i>G. Grassi, P. Domingo, L. Vervisch*</i>	Study on effects of low-temperature preheating on ignition and combustion of weakly caking coal (166) <i>Z. Li*, S. Zhu, J. Hui</i>	Numerical modeling of vibrational nonequilibrium detonations in hydrogen-oxygen mixtures (240) <i>S. M. Hussain, A. S. Karthik, A. Dahake, R. K. Singh, A. V. Singh*</i>	Detonation transmission experiments at large scale (203) <i>J. Melguizo-Gavilanes*, A. Pekalski</i>	Effects of μ PDE-driven excitation on a model supersonic combustor (254) <i>K.-H. Lee*, B.-K. Sung, S.W. Choi, G.-U. Mo, J.-Y. Choi</i>
14:40	Experimental and modeling study of $\text{NH}_3/\text{C}_2\text{H}_4$ Combustion (127) <i>O. Mathieu*, M. Abulail, C. M. Grégoire, A. Mousse-Rayaleh, A. Palomino, N. Chaumeix, H. Hashemi, P. Glarborg, E. L. Petersen</i>	Investigation of cook-off response characteristics of GAP propellant under structural constraints (50) <i>S. Guo, Y. Wu*, J. Wang, F. Jin, X. Wang</i>	The translational nonequilibrium structure of inert shock waves and triple points with account for heat fluxes (255) <i>E. Rice*, J. McDonald</i>	Sensitivity of detonation re-initiation at a back-facing step to transverse waves (184) <i>Y. Poroshyna*, G. Ciccarelli, S. Lau-Chapdelaine</i>	Trajectory analysis of liquid fuel injected normally to high-enthalpy supersonic crossflows (257) <i>J. Springer*, N. Dreyer, K. Ahmed</i>
15:05	Main-Track Poster Session and Coffee (Main Hall) - all day				
	Application of deep/machine learning to reactive systems Chairs: <i>H. D. Ng, Y. Morii</i>	Flame front structure and instabilities 2 Chairs: <i>S. Jackson, O. Mathieu</i>	DDT 6 Chairs: <i>W. Rudy, O. Dounia</i>	Dust flames and explosions Chairs: <i>S. Cooper, B. Maxwell</i>	Imploding / jet detonation Chairs: <i>P. Vidal, C. Chiquete</i>
15:25	Detonation cell sizes in hydrogen-methane blends (171) <i>G. Bakalis*, Y. Lyu, B. Zhang, H.D Ng</i>	The influence of wall conductivity on flame thermoacoustics in rectangular channels (120) <i>Z. Negrette*, S. Jackson, M. Short</i>	Choked flame and its transition to detonation in an obstructed channel (107) <i>J. Fan*, M. Li, H. Xiao</i>	Investigating turbulence and turbulent flame propagation in dust clouds (237) <i>C. Proust*, M. Battikh, J. Daubech</i>	Numerical simulations of imploding detonations (32) <i>L. Shi*, C.-Y. Wen</i>
15:50	Development of an automated computer vision approach for detonation cellular structure analysis (179) <i>D. Jalontzki*, S. Charash, A. Zussman, S. Pendurkar, G. Sharon, Y. Kozak</i>	Geometric characteristics of turbulent premixed methane-air flame in a constant volume vessel and the impact on flame-wall interaction (124) <i>Y. Wang*, S. Jiang, M. Tanahashi</i>	Experimental comparison of slow and fast gas heating processes to reduce the deflagration-to-detonation run-up distance in hydrogen-air detonations (135) <i>M. Alicherif*, D.A. Lacoste</i>	Examining the effect of reactivity parameters $S_{T,R}$ and χ on dust explosion venting (173) <i>C.R. Bauwens*, S. Dorofeev</i>	Behavior of imploding detonation waves in a cylindrical chamber (162) <i>K. Ishii*, H. Ueo</i>
16:15	Application of an ensemble kalman filter with gaussian anamorphosis to a 1D detonation flow (268) <i>J. Hansen*, D. Brouzet, M. Ihme</i>	Low Lewis number flames near a porous-plug burner: stability, dynamics and limits of existence (125) <i>D. Fernandez-Galisteo*, C. Jiménez, V. N. Kurdyumov</i>	Detonation initiation by reflection of a fast-flame at an obstacle (208) <i>M. Moran*, G. Ciccarelli</i>		Modeling and analysis of the planar jet-stabilized detonation waves (36) <i>C. Colby*, A. Poludnenko</i>
17:00 - 17:20	Banquet: buses departure				

Friday 1 August					
8:30	Plenary Lecture C140 Learnings and advancements in understanding vapour cloud explosions since Buncefield accident <i>Andrzej Pekalski, Shell U.K.</i> Chair: <i>M. I. Radulescu</i>				
9:00	Coffee break - 20 minutes				
	C309	C307	C140	C308	C240
	Laser diagnostics - kinetics 3 Chairs: <i>C. Gregoire</i>	Carbon free fuels - safety Chairs: <i>N. Chaumeix, D. Frost</i>	Detonation cell size Chairs: <i>K. Chatelain, H. Watanabe</i>	Detonation structure Chairs: <i>C. Chiquete, H. Yang</i>	Ramjets and scramjets 2 Chairs: <i>A. Kawasaki</i>
9:50	High-temperature absorption coefficient measurement of NH ₂ at 597 nm (47) <i>M. Abulail*, C. M. Grégoire, O. Mathieu, E. L. Petersen</i>	Ignition limits of hydrogen-diluted jets in shock tubes with a partially opened diaphragm (121) <i>M. Alves*, O. Nassar, S. Kudriakov, E. Studer, L. Ishay, Y. Kozak</i>	Comparison of detonation cell size models for alternative fuel blends composed of H ₂ , CO, CH ₄ (141) <i>A. Gupta*, A. Poyet, R. Stowe, V. Rodriguez, A. Chinnayya, S. Lau-Chapdelaine</i>	Stability of one-dimensional detonation driven by Lokta-Volterra oscillating chemical schemes (128) <i>M. Faghhih, R. Mevel*</i>	Baffled-tube ram accelerator operation with aluminum projectiles (126) <i>J. Correy, J. Clevenger, C. Knowlen*, A. Higgins</i>
10:15	Comprehensive study of 1,1-Diethoxypropane oxidation: shock tube experiments, laser speciation, and kinetic model development (190) <i>M. Z. Ali Khan*, C. Cao, T. A. Kashif, A. Farooq</i>	Experimental flammability limits of H ₂ -CO-CO ₂ -air mixtures and kinetic model simulation (139) <i>A. Palomino*, M. Comito, A. Mendy, A. Bentaib, A. Comandini, N. Chaumeix</i>	The correlation between cell structure and detonation stability parameters across multiple fuels and diluents (86) <i>D. Lont*, S. Jackson</i>	Experimental and calculated detonation cells in gaseous ethanol-oxygen mixtures (72) <i>T. Fessard*, L. Vilasi, V. Rodriguez, P. Vidal</i>	Experimental investigation of hollow-body ramjet rotating detonation engine for hypersonic propulsion (266) <i>Z. White*, A. Kotler, M. Thornton, J. Lahm, K. Ahmed</i>
10:40	Validation of the polyynes mechanism in soot formation (133) <i>T. Viola*, L. Carneiro Piton, M. Idir, N. Chaumeix, A. Comandini</i>	Enclosed ammonia vapor cloud explosion testing (271) <i>P. Diakow*, D. Malik, V. Martinez, O. Rodriguez, J. K. Thomas</i>	Detonation structure at realistic pressures: a differential diagnosis for the discrepancy between numerical simulations and experiments (238) <i>A. Ghosh, S. S. Dammati, A. Poludnenko*</i>	Experimental and numerical analysis of the cellular detonation structure for ethylene-oxygen mixtures (239) <i>A. Dahake, A. S. Karthik, S. M. Hussain, R. K. Singh, A. V. Singh*</i>	
11:05	Investigation of thermal decomposition of solid propellant components by online atmospheric pressure photoionization mass spectrometry (38) <i>Z. Zhou*, H. Ren, X. Xiao, X. Liu, X. Guo, F. Qi</i>	Detection of small burning hydrogen leaks at open-air industrial installations (214) <i>J. Brunzendorf*</i>	Numerical investigation of the detonation cell size in hydrogen and hydrocarbons with complex multi-step kinetics (244) <i>A. Ghosh*, S. S. Dammati, A. Poludnenko</i>	Study of detonation in isopropyl nitrate-air mixtures (56) <i>X. Huang, V. Sankar, K. Chatelain, R. Mevel*, D. Lacoste</i>	
11:30			Comparison of soot-foil and velocity map measurements in gaseous detonations (251) <i>D. R. Hart, L. Berson, R. Hytovich, K. A. Ahmed</i>	Detonation structural modulation using waveguides: an experimental study (232) <i>R. Punna*, G. Ciccarelli, J. Crane</i>	
12:00	Farewell party at conference venue (CRX)				

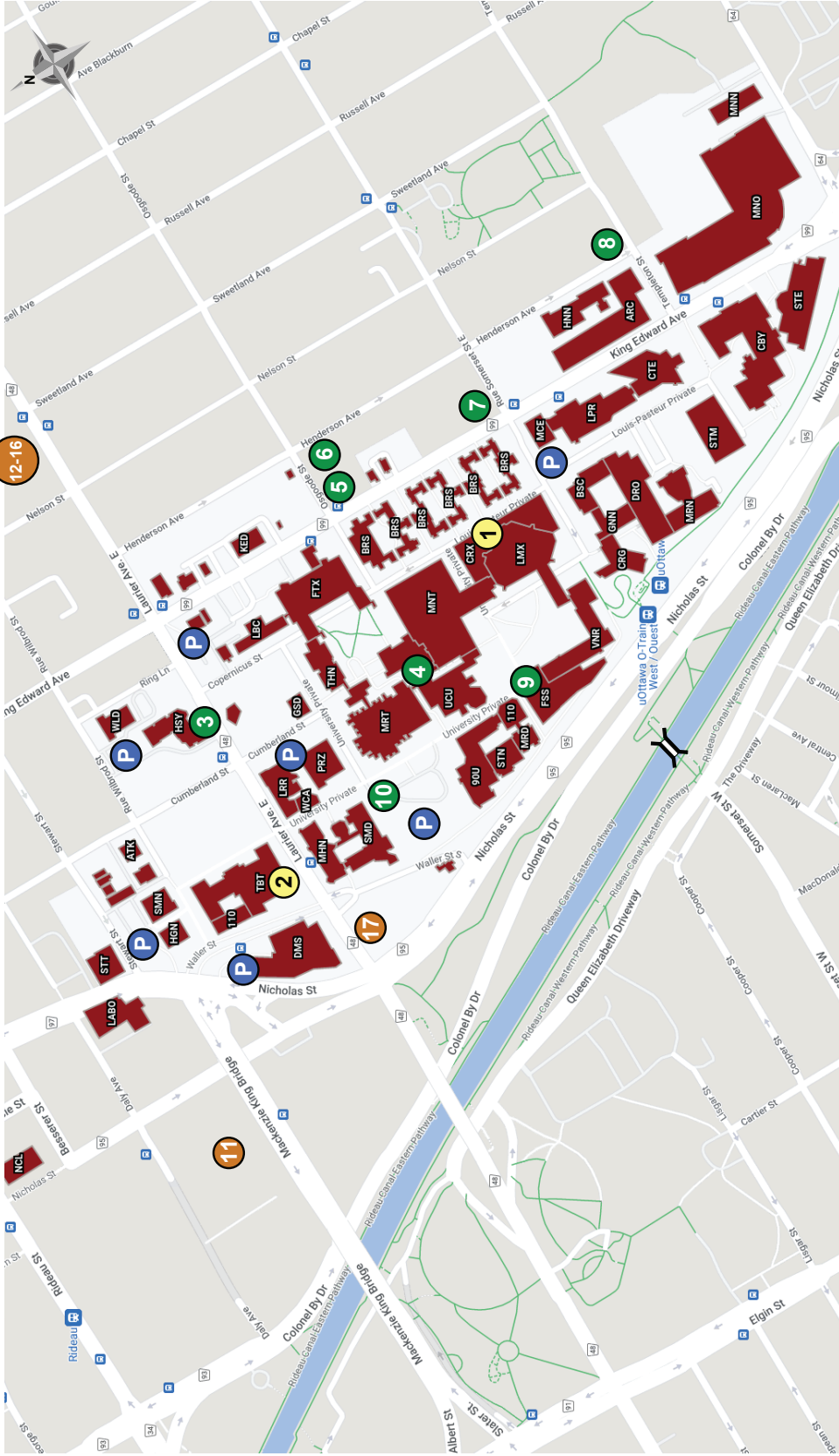
Thursday 31 July - all day**Work-in-Progress posters**

WIP-1	Experimental study on kerosene injection directions in a cylindrical air-breathing rotating detonation engine (99) <i>J. Tan, J. Gong*</i>
WIP-2	Experiment of rotating detonation turbine engine with a centrifugal compressor and axial turbine (105) <i>T. Moriya*, Y. Ide, N. Itouyama, K. Mat-suoka, M. Yasui, J. Kasahara</i>
WIP-3	Integration of shcramjet and ODWE with an air-breathing RDE: design and performance estimations (231) <i>G Defo*, C. Kiyanda</i>
WIP-4	Shock-to-detonation transition in hydrogen mixtures with repeated obstacles (272) <i>M. C. Restrepo*, H. Watanabe, A. Chinnayya, V. Rodriguez</i>
WIP-5	Modeling thermal runaway in li-ion cells under overheating abuse: a CFD study of gas and particle interactions (273) <i>S. Chakaroun*, P. Coste, S. de Persis, A. Bengaouer, J. Cognard, N. Chaumeix</i>
WIP-6	Studying explosion-induced flows inside buildings using a modular shock tube (274) <i>S. Courtiaud*, A. Dufourmentel, F. Riveault, P. Hérel, E. Perrin, G. Vandervelde</i>
WIP-7	Toward a progress variable combustion model for nonhomogeneous gas mixtures for nuclear power plants safety applications (275) <i>F.J.S. Velasco*, A. Dahmani, R.A. Otón-Martínez, J. Serna, O. de Francisco, J.M. Martín-Valdepeñas</i>
WIP-8	Enhancing the performance of flame arrester for H ₂ through composite materials (276) <i>N.-H. Dennda, M. Kreißig, G. Donini S. Spörhase, A. Krietsch, A. Lucassen, L. Ruwe*</i>
WIP-9	Towards LES simulations of the afterburning of high explosives containing aluminum particles as metallic additive (277) <i>I. Rocchi*, S. Courtiaud, L. Selle</i>
WIP-10	Study of the suppression mechanisms of heptafluoropropane and carbon dioxide mixtures on hydrogen-air explosions (278) <i>B. Nie*, L. Chang, M. Zhang, X. Shao</i>
WIP-11	On the 10th anniversary of the GraVent DDT database – Review of scope, utilization, and impact (279) <i>L. Boeck*, K. Planötscher, A. Jocher, T. Sattelmayer</i>
WIP-12	Recent investigations on the formation of steady oblique detonation wave in hypersonic flow (280) <i>Z. Hu*, W. Wang</i>
WIP-13	Numerical simulation of deflagration appearance in hydrogen-air mixtures turbulent viscous flows (281) <i>S. Martyushov*</i>
WIP-14	Three-dimensional study of isolated flame cell propagation in ultra-lean hydrogen-air mixtures (282) <i>R. Palomeque-Santiago, A. Dejoan, D. Fernández-Galisteo*, M. Rubio-Rubio, M. Sánchez-Sanz</i>
WIP-15	A simplified thermodynamically-consistent single-step mechanism for hydrogen combustion (283) <i>K. Turgut*, A. Chinnayya, P. Boivin, O. Dounia</i>
WIP-16	Bis(2,2,2-trifluoroethyl) Methylphosphonate as flame-retardant for safer lithium-ion batteries (284) <i>C. Gregoire*, D. Mohr, E. L. Petersen, O. Mathieu, P. Dievart, L. Catoire</i>
WIP-17	Analysis of detonation wave propagation inside the combustor of a disk-type rotating detonation engine (285) <i>S. Matsuzono*, E. Dzieminska, M. Kawalec, T. Suzuki, M. Ichiyana</i>
WIP-18	Flame spread along a slope (286) <i>T. Tsuruda*, T. Daitoku, S. Takizawa</i>
WIP-19	PDR Alliance: collaborative research on consequence modelling of accidental explosions in complex geometries (287) <i>T. Skjold*, H. Hysken, B. H. Hjertager, K. E. Teigen Giljarhus, M. Henriksen, K. Vaagsaether, V. D. Narasimhamurthy, T. S. Klein, S.S.V. Vianna, D. M. Johnson, D. Allason, J. Melguizo-Gavilanes, A. Pekalski, J. Thompson, K. E. Rian, C. Coffey, D. Siccama</i>
WIP-20	Rate coefficient determination of NH ₃ + CH ₃ - NH ₂ + CH ₄ (288) <i>M. Abulail*, C. Gregoire, O. Mathieu, P. Glarborg, E. Petersen</i>
WIP-21	Ignition delay times of SAF surrogates (289) <i>G. Merrir*, T. Viola, A. Comandini, N. Chaumeix, C. Viguier</i>
WIP-22	Ignition of fuel-rich H ₂ /O ₂ mixtures in pure O ₂ near the 2nd explosion limit (290) <i>M. Sandberg*, E. Petersen</i>
WIP-23	Assessment of low-efficiency driver gases in shock-tube flows over a wide range of conditions: cost analysis and optimal shock-tube design (291) <i>Z. Ding*, M. Sandberg, E. Petersen</i>
WIP-24	A laboratory-scale solid rocket motor thrust stand (292) <i>J. Pantoya*, K. Herder, E. Petersen</i>
WIP-25	Experimental/numerical exploration of deflagration-to-detonation transition in unconfined/semi-confined media (293) <i>K. Iwata*, S. Wada, R. Kurose, H. Arakaki, Y. Seki, S. Maeda, T. Obara</i>
WIP-26	PERL: expanding propulsion and energetics research capabilities at Texas A&M University (294) <i>K. Herder*, J. Pantoya, E. Petersen</i>
WIP-27	Exploration of the effects of Bis(2,2,2-trifluoroethyl) Methylphosphonate on the laminar flame speed of hydrogen (295) <i>M. Nielsen*, S. Vézilier, O. Mathieu, E. Petersen</i>
WIP-28	Experimental observation of deflagration to detonation transition: shock- finger flame interaction in a rectangular channel (296) <i>Z. Jerad*, M. Merad, S. De Persis, A. Comandini, N. Chaumeix</i>
WIP-29	A decision-making aid for the development of carbon-free hydrogen projects: AIDHY Project (297) <i>P. Dievart*, A. Comandini, N. Chaumeix</i>
WIP-30	Hypergolic ignition behavior of kerosene gel containing aluminum nanoparticles with hydrogen peroxide using a novel drop test method (298) <i>P.-F. Yang, Y.-H. Ho, Y.-S. Cheng, M.-H. Wu*, C.-W. Huang, S. Karmakar</i>
WIP-31	Effects of staged ammonia injection on emissions in methane-ammonia co-combustion (299) <i>H.-Y. Wu, F.-H. Wu, M.-H. Wu*, J. Hayashi</i>
WIP-32	A statistical study on the influence of wall proximity on the structure and stability of the detonation front (300) <i>M. Alicherif*, K. Chatelain, D. Lacoste</i>
WIP-33	Statistical and mechanistic characterization of DDT onset in hydrogen-air explosions at atmospheric conditions (301) <i>P. Bosnic*, M. Henriksen, D. Bjerketvedt, K. Vaagsaether</i>

Thursday 31 July - all day**Work-in-Progress posters**

WIP-34	Preliminary study on combustion behavior and blast characteristics of hydrogen balloons for safe operation (302) <i>T. Katsumi*, M. Tamura, T. Takahashi, Y. Sakamoto, H. Kobayashi, H. Fu-Ke, T. Yoshida</i>
WIP-35	Stable Weak Detonations based on Supersonic Autoignitive Reaction Wave Concept (303) <i>Y. Morii*, K. Maruta</i>
WIP-36	A shock dynamics approach for analyzing two-dimensional numerical detonation cells in gases (304) <i>H. Watanabe*, A. Chinnayya, P. Vidal</i>
WIP-37	Analysis of flow behavior and performance of an endwall injection system in a shock tube (305) <i>T. Z. Crumley, M. Abulail, R. Juarez*, E. L. Petersen</i>
WIP-38	Effects of isothermal wall boundary conditions on DDT simulations in CH ₄ /H ₂ /O ₂ mixtures in smooth channels (306) <i>Y. Lyu*, G. Bakalis, H. D. Ng</i>
WIP-39	Zfk-Fkpp transition boundary to describe critical instability parameter of 1D detonation wave (307) <i>A. Tsunoda*, Y. Morii, K. Maruta</i>
WIP-40	Upstream effects on oblique detonation waves (308) <i>P. Laad*, G.S. Sidharth</i>
WIP-41	Gas-phase detonation as a driver for imploding elastomer and liquid cylinders (309) <i>L. Bernard, T. Sobral, D.-C. Savu, A. Higgins*</i>
WIP-42	Detonation-bubble interaction: methods and scoping tests (310) <i>S. Williamson*, R. Paknahad, J. Crane, S. Lau-Chapdelaine</i>
WIP-43	Wildfire modeling of ember behavior and accumulation patterns around homes (311) <i>K. Gellerman, Y.-C. Chien*</i>
WIP-44	Experiment and kinetics analysis of char burnout in a laboratory-scale entrained flow reactor (EFR) (312) <i>M. Kebria, Y.-C. Chien*, D. Dunn-Rankin</i>
WIP-45	Large-scale shock-tube testing for coupled blast and fragmentation modeling (313) <i>S. Cooper*, J. Crepeau, M. Sanai</i>
WIP-46	Do two-dimensional detonation waves exist? (314) <i>T. Song, Y. Poroshyna, L. Ding, G. Ciccarelli*</i>
WIP-47	Regenerative cooling based gasification of liquid reactants for rotating detonation engine operation (230) <i>R. Kalmanson*, C. Kiyanda, S. Connolly-Boutin</i>

Food Map

uOttawa
Food map

Corktown footbridge



- **Food and Drinks OffCampus**

- 11 - Rideau Center (Food Court)
- 12 - Insta Bolz
- 13 - Thai Express
- 14 - Starbucks
- 15 - Dominos Pizza
- 16 - Sushman
- 17 - Subway



② Welcome Reception venue

- 9 - Première Moisson (Sandwiches)
10 - Le Bac à Frites (Burgers etc.)



1 Conference venue

● Food and Drinks OnCampus

- 3 - Second Cup Coffee
- 4 - Dining Hall
- 5 - Father and Sons Tavern
- 6 - 3 Brothers Shawarma and Poutine
- 7 - No Forks Given (Burgers)
- 8 - In's Kitchen (Korean Food)

Important Locations



uOttawa

Important Locations

- 1 Welcome Reception**
Tabaret (TBT) 112
75 Laurier East
Ottawa, ON K1N 6N6
- 2 Technical Sessions**
Crossroads (CRX)
2nd Floor - 4th Floor
100 Louis-Pasteur Pvt.
Ottawa, ON K1N 9N3
- 3 On-Campus Residences**
90 University Pvt.
Ottawa, ON K1N 6N5
- 4 O-Train Station**

Légende / Legend

- Distributrice de permis
Pay & Display Parking
- Stationnement accessible
Accessible Parking
- Accès
Access
- OC Transpo
- Line 1
- Taxi - point d'embarquement
Taxi Pick-up Point
- Téléphone de secours
Emergency Telephone
- Passerelle
- Tunnel

