

| Sunday           |                                                                                                                                                               |                                               |                                               |                                              |                                                      |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|-----------------------------------------------|----------------------------------------------|------------------------------------------------------|
| 17:00<br>- 20:00 | Welcome Reception<br>Tabaret (TBT) 112                                                                                                                        |                                               |                                               |                                              |                                                      |
| Monday           |                                                                                                                                                               |                                               |                                               |                                              |                                                      |
| 08:30            | Welcome                                                                                                                                                       |                                               |                                               |                                              |                                                      |
| 09:00            | Plenary Lecture: Kareem Ahmed, University of Central Florida, USA<br>Detonations from hypersonic propulsion engines to exploding stars<br><i>C140</i>         |                                               |                                               |                                              |                                                      |
| Room             | C309                                                                                                                                                          | C307                                          | C140                                          | C308                                         | C240                                                 |
| Set M1           | Low carbon fuels 1 (4)                                                                                                                                        | Ignition 1 - shock tubes (4)                  | Models - stability (4)                        | DDT 1 (4)                                    | Detonation engines 1 - injection (4)                 |
| Set M2           | Propellants 1 (4)                                                                                                                                             | Optical diagnostics - kinetics 1 (4)          | Liquid phase detonation (4)                   | DDT 2 (4)                                    | Detonation engines 2 - disk shape(4)                 |
| Set M3           | Carbon free fuels - metals (5)                                                                                                                                | Ignition 2 - characteristics (4)              | Liquid phase detonation (5)                   | Explosions (4)                               | Detonation engines 3 - cooling and heat transfer (5) |
| Tuesday          |                                                                                                                                                               |                                               |                                               |                                              |                                                      |
| 08:30            | Plenary Lecture: Pascale Domingo, CORIA-CNRS, France<br>Fast and capricious: combustion at high speed<br><i>C140</i>                                          |                                               |                                               |                                              |                                                      |
| Room             | C309                                                                                                                                                          | C307                                          | C140                                          | C308                                         | C240                                                 |
| Set T1           | Low carbon fuels 2 (4)                                                                                                                                        | Kinetics modeling 2 (5)                       | Narrow detonations (5)                        | DDT 4 (4)                                    | Detonation engines 4 - numerical (5)                 |
| Set T2           | Propellants 2 (4)                                                                                                                                             | Flame front structure and instabilities 1 (3) | Diffusive effects in detonations (4)          | DDT 5 (4)                                    | Detonation engines 5 - numerical (3)                 |
| Set T3           | Propellants 3 (3)                                                                                                                                             | Turbulent combustion (4)                      | Diffusive effects in detonations (4)          | DDT 6 (3)                                    | Detonation engines 6 (3)                             |
| Wednesday        |                                                                                                                                                               |                                               |                                               |                                              |                                                      |
| Room             | C309                                                                                                                                                          | C307                                          | C140                                          | C308                                         | C240                                                 |
| Set W1           | Carbon Free Fuels - Ammonia 1 (4)                                                                                                                             | Flame propagation 1 (4)                       | Detonation numerical (4)                      | Curved and divergent detonation (4)          | Detonation engines 7 - numerical (4)                 |
| Set W2           | Battery Kinetics and Safety 1 (3)                                                                                                                             | Flame propagation 2 (4)                       | Detonation (re)initiation 1 (4)               | Condensed-Phase Detonation (4)               | Detonation engines 8 (2)                             |
| Thursday         |                                                                                                                                                               |                                               |                                               |                                              |                                                      |
| 08:30            | Plenary Lecture: Aamir Farooq, KAUST, Saudi Arabia<br>New perspectives on multi-mode and multi-scale shockwave dynamics<br><i>C140</i>                        |                                               |                                               |                                              |                                                      |
| Room             | C309                                                                                                                                                          | C307                                          | C140                                          | C308                                         | C240                                                 |
| Set R1           | Application of deep/machine learning to reactive systems (4)                                                                                                  | Flame behavior and instabilities (4)          | Non-equilibrium effects in detonations (5)    | Double cellular structure and inhibition (4) | Detonation engines 9 / Oblique (5)                   |
| Set R2           | Carbon Free Fuels - Ammonia 2 (3)                                                                                                                             | Flame ignition (4)                            | Non-equilibrium effects in detonations (4)    | Detonation (re)initiation 2 (4)              | Scramjets / ramjets 1 (4)                            |
| Set R3           | Battery Kinetics and Safety 2 (3)                                                                                                                             | DDT 3 (3)                                     | Flame front structure and instabilities 2 (3) | Dust flames and explosions (3)               | Imploding / jet detonation (3)                       |
| Friday           |                                                                                                                                                               |                                               |                                               |                                              |                                                      |
| 08:30            | Plenary Lecture: Andrzej Pekalski, Shell U.K.<br>Learnings and advancements in understanding Vapour cloud explosions since Buncefield accident<br><i>C140</i> |                                               |                                               |                                              |                                                      |
| Room             | C309                                                                                                                                                          | C307                                          | C140                                          | C308                                         | C240                                                 |
| Set F1           | Laser diagnostics - kinetics 3 (4)                                                                                                                            | Carbon Free Fuels - safety (4)                | Detonation cell size (5)                      | Detonation structure (4)                     | Scramjets / ramjets 2 (2)                            |
|                  |                                                                                                                                                               |                                               |                                               |                                              | Fire dynamics (2)                                    |
| Set F2           |                                                                                                                                                               |                                               |                                               | Detonation (numerical) (4)                   | Propellants 4 (3)                                    |

| Monday |                                                                                                                                                                                                                                    |                                                                                                                                                                                                                             |                                                                                                                                                                  |                                                                                                                                                                                                                      |                                                                                                                                                                                                                                             |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 08:30  | WELCOME                                                                                                                                                                                                                            |                                                                                                                                                                                                                             |                                                                                                                                                                  |                                                                                                                                                                                                                      |                                                                                                                                                                                                                                             |
| 09:00  | Plenary Lecture: Kareem Ahmed, University of Central Florida, USA<br>Detonations from hypersonic propulsion engines to exploding stars<br><i>C140</i>                                                                              |                                                                                                                                                                                                                             |                                                                                                                                                                  |                                                                                                                                                                                                                      |                                                                                                                                                                                                                                             |
| 10:00  | COFFEE BREAK 20 min                                                                                                                                                                                                                |                                                                                                                                                                                                                             |                                                                                                                                                                  |                                                                                                                                                                                                                      |                                                                                                                                                                                                                                             |
| Room   | C309                                                                                                                                                                                                                               | C307                                                                                                                                                                                                                        | C140                                                                                                                                                             | C308                                                                                                                                                                                                                 | C240                                                                                                                                                                                                                                        |
| Set M1 | Low carbon fuels 1                                                                                                                                                                                                                 | Ignition 1 - shock tubes                                                                                                                                                                                                    | Models - stability                                                                                                                                               | DDT 1                                                                                                                                                                                                                | Detonation Engine 1 (injection)                                                                                                                                                                                                             |
| 10:20  | Visualization of Internal Structural Changes during Transient Pyrolysis of Wood Containing Ammonium Nitrate (14)<br><i>T. Daitoku*</i> ; <i>T. Tsuruda, T. Kinugasa</i>                                                            | Challenges Associated with Shock-Tube Ignition Experiments in Undiluted Oxygen Environments (44)<br><i>M. Sandberg*, E. Petersen</i>                                                                                        | News from the Chapman-Jouguet detonation front: A Velocity-Entropy Invariance theorem (172)<br><i>P. Vidal*, R. Zitoun</i>                                       | Transition to detonation due to shock focusing in C2H <sub>6</sub> -air mixtures (28)<br><i>W. Rudy*</i> ; <i>A. Pekalski</i>                                                                                        | High-Speed Schlieren Imaging of Rotating Detonation Engine Fuel Injection During Operation (58)<br><i>M. Stocke*, T. Wanstall, B. Sell, J. Hoke, M. Fotta</i>                                                                               |
| 10:45  | Experimental study on the effects of turbulence and ambient composition on butanol droplet evaporation (57)<br><i>P. Cheung, A. Arabkhalaj, M. Birouk*</i>                                                                         | Large Eddy Simulations of Remote Ignition in Methane/Air mixtures behind Reflected Shock Waves (204)<br><i>T.A. Kashif*, J. Subburaj, A. Farooq</i>                                                                         | Effect of Curvature on the Neutral Stability Boundary for Cellular Gaseous Detonations (264)<br><i>M. Short*, S. Voelkel, C. Chiquete</i>                        | Flame morphology during acceleration in unobstructed channels: effect of fundamental combustion properties (61)<br><i>C. Mejia-Botero, J. Melguizo-Gavilanes*, L.F. Figueira da Silva, F. Vivot</i>                  | Design of a Premixed Rotating Detonation Engine with a Porous Injector (60)<br><i>Y. Koyama*, N. Suto, K. Matsuoka, N. Itoyama, A. Kawasaki, H. Watanabe, J. Kasahara, Y. Ide</i>                                                           |
| 11:10  | Effects of Equivalence Ratio on the Fire Characteristics of Hydroprocessed Esters and Fatty Acids derived Sustainable Aviation Fuel for Aeronautical Application (108)<br><i>A.M. Raji*, B. Manescau, K. Chetehouna, L. Lamoot</i> | Changes in Ignition Behavior of Aged Fuels and Lubricants Behind Reflected Shock Waves (134)<br><i>R. Juarez*, A. Lira, M. Abulail, E. L. Petersen</i>                                                                      | Stabilizing Effects of Real Gas for Cellular Detonations (12)<br><i>Z. Weng, R. Mevel*, Z. Ren, S. Shuai</i>                                                     | Suppression of Deflagration-to-Detonation Transition by Sintered Wire Mesh (67)<br><i>K. Kashiro*, K. Ishii</i>                                                                                                      | Experimental Research of the Effect of the Slit on the Coupled Rotating Detonation Engine (91)<br><i>A. Nakama Akihito*, S. Inamori, Y. Ide, N. Itoyama, K. Matsuoka, M. Yasui, J. Kasahara, A. Matsuo, I. Funaki, H. Tanno</i>             |
| 11:35  | Thermal Properties of Some African Tropical Woods: Okoume, Bilinga, Movingui, Ozigo and Nove and their Potential as Biofuel Feedstocks (109)<br><i>A.M. Raji*, B. Manescau, K. Chetehouna, S. Ekomy Ango</i>                       | Ignition Behavior of Hydrogen in the Presence of Lube Oil Behind Reflected Shock Waves (209)<br><i>M. Adil*, J. Subburaj, T. Kashif, T. F. Hong, E. Cenker, A. S. Ramadan, A. Farooq</i>                                    | Decay of Shock Perturbations: A Geometrical Shock Dynamics Study (267)<br><i>A. Sow*, Y. Amor, M. I. Radulescu</i>                                               | DDT Induction Distance Measurements for Methane/hydrogen/oxygen (211)<br><i>T. Elia*, G. Ciccarelli</i>                                                                                                              | Effect of Injector Arrangement in Disk-type Rotating Detonation Engine (270)<br><i>M. Mizota*, S. Yamazaki, S. Matsuzono, E. Dzieminska</i>                                                                                                 |
| 12:00  | LUNCH 1 h 30                                                                                                                                                                                                                       |                                                                                                                                                                                                                             |                                                                                                                                                                  |                                                                                                                                                                                                                      |                                                                                                                                                                                                                                             |
| Set M2 | Propellants 1                                                                                                                                                                                                                      | Optical diagnostics - kinetics 1                                                                                                                                                                                            | Liquid phase detonation 1                                                                                                                                        | DDT 2                                                                                                                                                                                                                | Detonation Engine 2 (Disk type +)                                                                                                                                                                                                           |
| 13:30  | Effects of an Fe-Based MOF Additive on the Burning Rate of AP/HTPB Composite Propellants (43 )<br><i>J. Pantoya*, E. Petersen, T. Swindell</i>                                                                                     | Towards the Development of an IR Spectra-Based Approach for Characterizing Fuel Combustion Behavior (19)<br><i>P. Biswas*, V. Boddapati, A. Klingberg, H. Wang, R. K. Hanson</i>                                            | A 1D Lagrangian scheme on NASG stiffened medium model with varying cross-section area (188)<br><i>W. Wang*, M. I. Radulescu</i>                                  | The influence of nitrogen dilution level in stoichiometric H <sub>2</sub> -O <sub>2</sub> mixture on the transition to detonation in a 90-deg wedge (130)<br><i>W. Rudy*, A. Teodorczyk</i>                          | Effects of Exhaust Dilution in a Disk-shaped Pressure Gain Combustor (29)<br><i>A. Lim*, P.H. Chua, X. Huang, Z.W. Teo, J.-M. Li, C.J. Teo, B.C. Khoo</i>                                                                                   |
| 13:55  | Influence of Triphenylphosphine-Coated Aluminum Nanoparticles on the Combustion Dynamics of Al/CuO Nanothermites Mesh in Confined Spaces (129)<br><i>X.-R. Lu, M.-H. Wu*, Y.-S. Cheng, C.-W. Huang</i>                             | Laser Absorption Measurements of H35Cl in a Shock Tube for Investigating the Chemical Kinetics of Rocket Propellants (31)<br><i>C. Gregoire*, E. L. Petersen</i>                                                            | Decane droplet combustion onset in air behind a Mach 5.3 shock wave (201)<br><i>F. Vivot*, A. Clavierie</i>                                                      | Detonation Propagation over a Surface of Water in Oxyhydrogen Mixture (146)<br><i>S. Mall*, E. Dzieminska</i>                                                                                                        | Experimental Investigation of the Effects of Geometry on the Performance Characteristics of the Disk-shaped Pressure Gain Combustor (30)<br><i>P.H. Chua*, A. Lim; Z.W.A. Teo, X. Huang, J.-M. Li, C.J. Teo, B.C. Khoo</i>                  |
| 14:20  | Laser Ignition of Al-MoO <sub>3</sub> Thermites (245)<br><i>S. Riel*, A. Higgins, F. Kelly, J. Loiseau</i>                                                                                                                         | Experimental Investigation of Liquid Fuel Autoignition: Insights from Advanced Optical Diagnostics (159)<br><i>C. Fouchier*, J. Shepherd</i>                                                                                | Shock-induced breakup of liquid fuel jet: a coupled momentum and energy transfer theory (223)<br><i>A. Jayaraman*, N. Kateris, E. Genter, H. Wang</i>            | The Role of Perturbations on the Shock-Flame Complex Leading to Detonation (205)<br><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)<br><i>V. Joseph*, J. Kasahara, K. Matsuoka, N. Itoyama, 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)<br><i>R. K. Deepachanthiran*, K. Gnanaprakash</i>                                                                   | Ignition delay time and multi-speciation measurements of ammonia/C1 mixtures in shock tube (103)<br><i>N. Farzana*; B. Shu; H. Karas; M. Li, S. Agarwal, R. Fernandes, D. Zhu</i>                                           | Unsteady Effects on Pathological Droplet-fueled Detonations (233)<br><i>R. Hernández Sánchez*, J. Carpio Huertas, D. Martínez Ruiz, C. Huete</i>                 | Fast-Flame to Detonation Transition in a Round Tube (207)<br><i>M. Moran*, G. Ciccarelli</i>                                                                                                                         | Operational Characteristics and Performance of the Disk-RDRE (183)<br><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 min                                                                                                                                                                                                                |                                                                                                                                                                                                                             |                                                                                                                                                                  |                                                                                                                                                                                                                      |                                                                                                                                                                                                                                             |
| Set M3 | Carbon free fuels - metals                                                                                                                                                                                                         | Ignition 2 - characteristics                                                                                                                                                                                                | Liquid phase detonation 2                                                                                                                                        | Explosions                                                                                                                                                                                                           | Detonation Engine 3 (Cooling and heat transfer)                                                                                                                                                                                             |
| 15:30  | Ignition mechanisms of aluminum particles in hydrocarbon products (45)<br><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)<br><i>C. Wu*, R. Schießl, U. Maas</i>                                                                             | Detonability and Propagation Limits of Spray Detonations in Jet Fuel-Air Mixtures (33)<br><i>S.S. Dammati*, A. Poludnenko</i>                                    | Background oriented Schlieren measurements for pressure relief systems in the free field (6)<br><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)<br><i>S. Inamori*, A. Nakamori, Y. Ide, N. Itoyama, 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)<br><i>E. Antar*, C. Wong, C. Heng, N. Chepel, S. Goroshin, J. Berghorson</i>                                    | Sustainable aviation fuels vs. Jet A1: experimental insights into laminar burning velocity and minimum ignition energy (152)<br><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)<br><i>S. Agee, M. Paudel, P. Ramaprabhu, J. McFarland*</i>                              | PDRFoam performance for flame acceleration in congested quiescent clouds (200)<br><i>J. Melguizo-Gavilanes*, A. Pekalski</i>                                                                                         | Film Cooling Implementation in Micro Rotating Detonation Combustor (101)<br><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)<br><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)<br><i>S. Xu*, E. Liu, L. Zhang</i>                                                                                                             | Theory and Canonical Experiment Development for Strong Shock-Induced Droplet Drag and Vaporization (115)<br><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)<br><i>A. Lindalen*, M. Henriksen, D. Bjerketvedt</i>                                                                  | Impact of heat transfer on a 1 inch rotating detonation rocket engine (213)<br><i>D. Ramesh*, P. Meagher, X. Zhao</i>                                                                                                                       |
| 16:45  | Silicon energetic dust particles as carbon-free energy carriers (97)<br><i>H. Heng*, C. Mani, N. Chepel, K. Mangalvedhe, E. Antar, S. Goroshin, J. Berghorson</i>                                                                  | Study on the combustion characteristics of high temperature activation gas-solid binary fuel (169)<br><i>H. Wang*, W. Song, G. Song</i>                                                                                     | Experimental Investigation of Fuel Droplet Size Effects on Liquid Cloud Detonations (117)<br><i>T. Brown, R. Hytovich, K. Ahmed*</i>                             | Experimental and modeling study on the thermal response of vertical storage tanks with different filling levels (37)<br><i>X. Yu*, J. Bai, C. Zhu, R. Zong</i>                                                       | Regenerative Cooling Based Gasification of Liquid Reactants for Rotating Detonation Engine Operation (230)<br><i>R. Kalmanson*, C. Kiyanda, S. Connolly-Boutin</i>                                                                          |
| 17:10  | Effect of heating process on the ignition behavior of fine iron particles—A theoretical analysis (112)<br><i>X. Mi*</i>                                                                                                            |                                                                                                                                                                                                                             | A real liquid Volume-of-fluid framework with evaporation dynamics (187)<br><i>L. Angelilli*, V. Raman</i>                                                        |                                                                                                                                                                                                                      | Evaluation Method For The Non-ideal Heat Release Characteristics of the Rotating Detonation Combustor (110)<br><i>Y. Shi*, W. Dai, P. Zhao, H. Wen, B. Wang</i>                                                                             |
|        |                                                                                                                                                                                                                                    |                                                                                                                                                                                                                             | Short discussion session : 15 min                                                                                                                                |                                                                                                                                                                                                                      |                                                                                                                                                                                                                                             |

| Tuesday |                                                                                                                                                                                                                                                                        |                                                                                                                                                                    |                                                                                                                                                                        |                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                             |
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| 08:30   | Plenary Lecture: Pascale Domingo, CORIA-CNRS, France<br>Fast and capricious: combustion at high speed<br>C140                                                                                                                                                          |                                                                                                                                                                    |                                                                                                                                                                        |                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                             |
| 09:30   | COFFEE BREAK 20 min                                                                                                                                                                                                                                                    |                                                                                                                                                                    |                                                                                                                                                                        |                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                             |
| Room    | C309                                                                                                                                                                                                                                                                   | C307                                                                                                                                                               | C140                                                                                                                                                                   | C308                                                                                                                                                                                                                                                     | C240                                                                                                                                                                                                                        |
| Set T1  | Low carbon fuels 2                                                                                                                                                                                                                                                     | Kinetics modeling 2                                                                                                                                                | Narrow detonations                                                                                                                                                     | DDT 4                                                                                                                                                                                                                                                    | Detonation Engine 4 (Numerical)                                                                                                                                                                                             |
| 09:50   | Experimental investigation on biogas flame stability in laboratory coaxial burners and gas stoves (165)<br>M. Hassene, Y. Jery, B. Sarh, A.A. Yontar, H. H. El Bari, T. Boushaki*                                                                                      | Reaction-Diffusion Manifolds (REDIMs) - gradient embedding approach (176)<br>S. Shashidharan*, R. Schiessl, V. Bykov, U. Maas                                      | Delayed autoignition in Propagating Detonations (263)<br>L. Berson*, R. Hytovick, R. Cideme, K. Ahmed                                                                  | Detonation Initiation Regimes of Shock-Flame Complexes in Fuel Blends of Hydrogen and Methane (154)<br>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)<br>Q. Meng, C. Wen*                                                                                                                      |
| 10:15   | Experimental CO Time-History Study of the Pyrolysis of Pentan-1-ol, Neopentanol and 2-Methyl-butan-1-ol in a Shock Tube (242)<br>M. Khan-Ghauri*, C. Gregoire, Z. Serinyel, O. Clement, G. Dayma, M. Di Teodoro, S. N. Elliott, C. Cavallotti, O. Mathieu, E. Petersen | N2O Laser Absorption Measurements During Toluene/N2O Combustion (46)<br>O. Mathieu*, A. Bhattacharya, C. M. Grégoire, E. L. Petersen                               | Lean detonability of hydrogen-oxygen mixtures in narrow channels (216)<br>T. Westenhofer*, B. Devine, X. Shi                                                           | Collision Modes of Constant-Speed Planar Auto-Ignition waves (236)<br>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)<br>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)<br>B. Sarh*, Y. Rahib, V. Belandria, T. Boushaki                                                                                            | An Experimental and Kinetic Modeling Approach to a Martian Fuel Combustion (77)<br>N. Amirov, Z. Serinyel, F. Halter, F. Foucher, G. Dayma*                        | Experimental study of hydrogen detonations in coaxial channels (71)<br>A. Poyet*, H. Watanabe, V. Rodriguez, A. Chinnayya                                              | Computational Investigation of Flame Acceleration and Transition to Detonation (250)<br>J. Jayachandran, N. Dexter-Brown*                                                                                                                                | Adaptive Mesh Refinement based Simulation of a Three-dimensional Methane-Oxygen Rotating Detonation Rocket Engine (83)<br>M. Powers*, S. Sharma, V. Raman                                                                   |
| 11:05   | Pyrolysis of large biomass particles: model validation and application to Coffee Husks valorization (157)<br>M.M. Afessa*, A. Locaspi, P. Debiagi, A. Frassoldati, R. Caraccio, A.V. Ramayya, T. Faravelli                                                             | Kinetics of soot formation from benzene pyrolysis (132)<br>T. Viola*, L. Carneiro, M. Idir, N. Chaumeix, A. Comandini                                              | Propagation limits of cellular detonation in narrow channels (256)<br>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)<br>A.K. Hayashi*, I. Nakamori, T. Tomizuka, A. Takahashi, F. Onishi, M. Kuznetsov, T. Kodama, Y. Tamauchi, N. Satou | Wave Structures in Simulated 25 mm Rotating Detonation Rocket Engines (87)<br>M. Ross*, J. Burr                                                                                                                             |
| 11:30   |                                                                                                                                                                                                                                                                        | Sensitivity of Reaction-Diffusion Manifolds (REDIMs) with respect to gradient estimates and boundary conditions (147)<br>V. Bykov*, U. Maas                        | Scaling Analysis of Gaseous Detonation Limits in Tubes (189)<br>X. Zhang, M. Zeng, A. Chinnayya, W. Fan, Q. Xiao                                                       |                                                                                                                                                                                                                                                          | Numerical Study of Rotating Detonation Combustor with Backward Facing Step (10)<br>Q. Sun*, Y. Hou, J. Wang                                                                                                                 |
| 11:55   | LUNCH 1 h 30                                                                                                                                                                                                                                                           |                                                                                                                                                                    |                                                                                                                                                                        |                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                             |
| Set T2  | Propellants 2                                                                                                                                                                                                                                                          | Flame front structure and instabilities 1                                                                                                                          | Diffusive effects in detonations 1                                                                                                                                     | DDT 5                                                                                                                                                                                                                                                    | Detonation Engine 5 (Numerical)                                                                                                                                                                                             |
| 13:25   | Reaction Propagation in Fumed Silica Gelled HAN-Based Propellants (191)<br>Y.-J. Chen, I.-Y. Tsai, P.-F. Yang, M.-H. Wu*                                                                                                                                               | Spatially Resolved Measurements of 3D Cellular Structure of Premixed H2/O2/N2 Flames on a Porous-Plug Burner (104)<br>Z. Yan, X. Nie, S. Wang*                     | The mean pressure evolution in detonation cells (259)<br>M.I. Radulescu, F. Zangene                                                                                    | Modeling of Flame Acceleration and DDT in Open-Ended Channel with Homogeneous Premixed H2-Air Mixture (150)<br>P. Bosnic*, M. Henriksen, D. Bjerketvedt, K. Vaagsaether                                                                                  | Detonation Wave Velocity Error Calculation and Comparison of Methods (78)<br>R. Hencel*, J. Hoke, M. Fotia                                                                                                                  |
| 13:50   | Burning characteristics of aluminium-magnesium blended hydro-reactive solid propellants (199)<br>P. Jain, R. K. Deepachanthiran, G. Kanagaraj*                                                                                                                         | Multiphase Simulations of Hybrid Aluminum Particle-Propane Flames in a Hele-Shaw Cell (218)<br>J. Aguilar*, S. Bhalekar, R. W. Houim                               | Heat Loss Effects on Thin-Channel Detonation Propagation in Hydrogen-Oxygen-Argon Mixtures (114)<br>B. Maxwell*, C. Schmitt, J. Smith                                  | Effect of Numerical Flame Resolution on the Acceleration History of a Premixed Hydrogen-Oxygen Flame Transitioning to Detonation (196)<br>T. Alzer*, J. Melguizo-Gavilanes, I. Wlokas, A. Kempf                                                          | Numerical Study on an Euler-Euler model for Liquid-Gas Two-Phase Detonation in n-Heptane/Air Mixture (168)<br>H. Park*, N. Tsuboi, A.K. Hayashi                                                                             |
| 14:15   | Performance Parameter Estimation of Hybrid Rocket with Varying Concentration of Hydrogen Peroxide (258)<br>V.K. Rathi*, R. Kumar                                                                                                                                       | Three-dimensional Visualization of Flame-Vortex Entrainment in Hydrogen/Methane air Mixtures (228)<br>S. Kia*, M. I. Radulescu, K. Cheevers, C. R. L. Bauwens      | A DNS study of detonation-turbulence interaction using massless tracer particles: effects of turbulent Reynolds number (116)<br>S. Suzuki, K. Iwata, R. Kai, R. Kurose | Effect of Flow Divergence on the Structure of Detonation in Rich H2-NO2/N2O4 Mixtures (229)<br>B. Shirvani*, Z. Ni, F. Veiga-Lopez, B. Maxwell, R. Mevel, J. Luche, P. Vidal                                                                             | LES Study of Combustion Dynamics and NOx Emissions in a Full-Scale Hydrogen-Air Rotating Detonation Engine (192)<br>P. Pal*, P. Strakey, D. Ferguson                                                                        |
| 14:40   | Combustion Modeling of Aluminum-Enriched Propellants Using a Surface Tension SPH Model (68)<br>H.-S. Choi*, R. Rajak, J.J. Yoh                                                                                                                                         |                                                                                                                                                                    | Role of the turbulent burning in the quenching limits of gaseous detonation confined by an inert compressible layer (118)<br>H. Watanabe*, V. Robin, A. Chinnayya      | Deflagration-to-detonation transition in a gradient of atomic species formed by pulsed nanosecond plasma (219)<br>V. Lafaurie*, S. Starikovskaia, P. Vidal                                                                                               |                                                                                                                                                                                                                             |
| 15:05   | COFFEE BREAK 20 min                                                                                                                                                                                                                                                    |                                                                                                                                                                    |                                                                                                                                                                        |                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                             |
| Set T3  | Propellants 3                                                                                                                                                                                                                                                          | Turbulent combustion                                                                                                                                               | Diffusive effects in detonations 2                                                                                                                                     | DDT 6                                                                                                                                                                                                                                                    | Detonation Engine 6 (Experiments)                                                                                                                                                                                           |
| 15:25   | Ignition characteristics of pyroelectric solid propellants containing perchlorate and nitrate based ionic oxidizers (138)<br>A. Mahendharan, G. Kannan*                                                                                                                | Analytical model of transcritical diffusion flame in a turbulent coaxial jet (5)<br>A. Genot*, M. Bouton, L. Sanchez, H. Bezaud                                    | Towards the large-scale modeling of turbulent combustion in fast deflagrations (122)<br>O. Dounia*, J.-J. Hok, F. Meziat, Q. Douasbin, T. Jaravel, Q. Vernet           | Numerical investigation of DDT process in a channel with grooves (145)<br>H. Shiga*, E. Dzieminska, N. Tsuboi                                                                                                                                            | Detonation-wave and Combustion Core Interaction in a Flow through RDC (64)<br>E. Gutmark*, R. Wiggins, T. Pri                                                                                                               |
| 15:50   | Blast wave formation during ballistic impact of consolidated metal powder projectiles (227)<br>J. Tubman*, D. Frost, S. Goroshin, J. Loiseau, D. Idrici, V. Muckensturm                                                                                                | Experimental study of a transcritical LOx/CH4 swirl flame (7)<br>M. Bouton*, A. Nicole, N. Fdida, S. Boulal, L. Vingert, M. Théron, A. Genot, G. Ribert            | Experimental Observations on the Reaction of Unburned Pockets (153)<br>M. Frederick*, J. Shepherd, C. Slabaugh                                                         | Experimental analysis of the effect of initial conditions on spontaneous detonation development mechanisms for a hydrogen/n-decane mixture (178)<br>R.N. Ezekwesili*, C. Strozzi, M. Bellenoue, M. Bohon                                                 | Rotating Detonation Rocket Engine Operation in 10-mm and 25-mm Coreless Combustors (123)<br>C. Knowlen*, T. Mundi, Q. Roberts, M. Kurosaka                                                                                  |
| 16:15   | Using Magnetic Nano Ferrites to Alter the Ignition Time Delay of Shellac-based Pyrotechnic Igniter (249)<br>L. Bansal*, M. Naagar, A. Thakur                                                                                                                           | Large Eddy Simulation of a LOx/CH4 swirl flame under transcritical conditions (8)<br>M. Bouton*, A. Nicole, A. Genot, G. Ribert                                    | Role of Viscosity in the Detonation Cell Cycle (252)<br>P. Meagher*, X. Zhao                                                                                           | Elucidating the Mechanism of Shock Wave Generation within a Subsonic Reaction Wave through Extension of Zel'dovich's Ignition Front Theory (248)<br>H. Okada*, Y. Morii, A. Tsunoda, K. Maruta                                                           | Experimental Investigation of Heat Flux in a Small-Scale Oxygen-Hydrogen Rotating Detonation Rocket Combustor (177)<br>F. Ditsche*, J. Petersen, W. Armbruster, M. Börner, M. Propst, M. Tajmar, C. Christian               |
| 16:40   |                                                                                                                                                                                                                                                                        | Combustion Explicitly Filtered Large-Eddy Simulation: A novel approach to multi-species LES (76)<br>A. Beroudiaux, L. Vervisch*, Q. Cerutti, P. Domingo, G. Ribert | The burning mechanism of non-reacted pockets in cellular detonations (253)<br>F. Zangene*, M.I. Radulescu                                                              |                                                                                                                                                                                                                                                          | Airbreathing Kerosene-Fueled Detonation Combustion Chamber-Comparison of Different Combustion Modes (180)<br>M. Kawalec*, A. Bilar, K. Benkiewicz                                                                           |
|         |                                                                                                                                                                                                                                                                        |                                                                                                                                                                    | Short discussion session : 15 min                                                                                                                                      |                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                             |

| Wednesday |                                                                                                                                                                                                                     |                                                                                                                                                                                                                                     |                                                                                                                                                                                               |                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                             |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Room      | C309                                                                                                                                                                                                                | C307                                                                                                                                                                                                                                | C140                                                                                                                                                                                          | C308                                                                                                                                                                                                      | C240                                                                                                                                                                                                                                                                        |
| Set W1    | <b>Carbon free fuels - ammonia 1</b>                                                                                                                                                                                | <b>Flame propagation 1</b>                                                                                                                                                                                                          | <b>Detonation (numerical)</b>                                                                                                                                                                 | <b>Curved and divergent detonations</b>                                                                                                                                                                   | <b>Detonation Engine 7 (Numerical)</b>                                                                                                                                                                                                                                      |
| 09:00     | Laminar Burning Velocities of Hydrogen and Ammonia Blends (193)<br><i>M. Hermiksen*, J. A. Shin, D. Bjerketvedt</i>                                                                                                 | Effect of pressure on the high-temperature flame propagation of ammonia/hydrogen blends (9)<br><i>M. Figueroa Labastida*, Lingzhi Zheng, Lauren Simitz, Ronald K. Hanson</i>                                                        | Numerical Resolution Requirements for Narrow Channel Detonation Simulations (21)<br><i>M. Martin*, A. S. Venkataraman, E. S. Oran, H. Farah</i>                                               | Experimental and Detonation-Shock Dynamics analyses of cellular detonations in diverging channels: the effects of the cross-sectional shape (53)<br><i>V. Monnier, V. Rodriguez*, P. Vidal, R. Zitoun</i> | Predictive Model for Rotating Detonation Engine Wave Structure (151)<br><i>R. Burke*, T. Rezzag</i>                                                                                                                                                                         |
| 09:25     | High-Pressure Laminar Flame Speed Measurements of an Ammonia/Hydrogen/Nitrogen Fuel Blend (65)<br><i>U. Louise Costa*, Y. Almarzooq, A. Hardaya, M. Hay, W. Kulatilaka, E. Petersen</i>                             | Real gas effects on ammonia-oxygen laminar flame speed (11)<br><i>F. Veiga-Lopez, Z. Weng, R. Mevel*, G. Wang</i>                                                                                                                   | Numerical Study of Detonation Propagating in Hydrogen-Nitrogen Tetroxide Mixtures (42)<br><i>Z. Ni, S. Gallier, R. Mevel*, G. Wang, B. Wang</i>                                               | Wave Reflections and Velocities Generated by Detonation Propagation Through Circular Arcs (102)<br><i>S. Jackson*, D. Lont, J. Martinez, M. Short</i>                                                     | Flow Structure in Idealized Rotating Detonation Combustor with Supersonic Inflow (156)<br><i>R. Fernandez*, V. Raman</i>                                                                                                                                                    |
| 09:50     | Impact of Detailed Molecular Transport on Ammonia/Hydrogen Ignition Delay Time Measurements in Rapid Compression Machines (234)<br><i>G. Wu*, D. G. I.~Oli</i>                                                      | Cellular Instabilities and Laminar Burning Velocities of Spherically Expanding H <sub>2</sub> /air flames doped with methane and diluted with water (163)<br><i>P. Dievart*, A. Zemba, A. Mousse Rayaleh, T. Katsumi, N. Chahom</i> | Propagation and Structure of Hybrid Aluminum-Hydrogen-Air Detonations: A Computational Approach (54)<br><i>S. Guhathakurta*</i>                                                               | The effect of activation energy on gaseous detonation initiation and propagation in curved geometries (62)<br><i>C. Chiquete*, M. Short</i>                                                               | A model for multi-wave dynamics in a rotating detonation engine (197)<br><i>S.S. Xiaocheng 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)<br><i>Q. Zhang*, Z. Yang, R. Zhang, Y. Qi, Z. Wang</i> | Measuring Laminar Flame Speed of Lubrication Oil Mist in Air and CH <sub>4</sub> -Air Mixtures (235)<br><i>J. Jacobs*, M. A. Turner, E. L. Petersen</i>                                                                             | A Global 4-Step Combustion Modelling Strategy for Hydrogen and Blends of Hydrogen and Natural Gas (161)<br><i>B Maxwell*, R. Murugesan, S. Miri, V. Premnath, D. R. Kannan, J. Jeevarajan</i> | Critical Initiation of Curved Unsteady Detonation in Noble-Abel and van der Waals Gas (13)<br><i>Z. Weng, R. Mevel*</i>                                                                                   | Effect of Ozone Addition on the Detonation Wave Structure of Ethylene-Oxygen Systems (243)<br><i>A. Karthik, A. Dahake, R.K. Singh, A. Vikram Singh*</i>                                                                                                                    |
| 10:40     | COFFEE BREAK 20 min                                                                                                                                                                                                 |                                                                                                                                                                                                                                     |                                                                                                                                                                                               |                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                             |
| Set W2    | <b>Battery kinetics and safety 1</b>                                                                                                                                                                                | <b>Flame propagation 2</b>                                                                                                                                                                                                          | <b>Detonation (re)initiation 1</b>                                                                                                                                                            | <b>Condensed-Phase Detonation</b>                                                                                                                                                                         | <b>Detonation Engine 8</b>                                                                                                                                                                                                                                                  |
| 11:00     | Understanding the Thermochemical Reactions of Lithium and Carbonate Electrolytes at Elevated Temperatures (20)<br><i>J. Oh*, M. Tang</i>                                                                            | Simplified Chemical Reaction Model and Its Application in Flame Acceleration and Detonation (35)<br><i>Y. Sun*</i>                                                                                                                  | An experimental study of cellular detonations in gaseous dodecane/air mixtures (74)<br><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)<br><i>J. Garno*, M. Short, S. Voelkel, C. Chiquete</i>                                                | Impact of Turbulence on Wave Propagation in a C <sub>2</sub> H <sub>4</sub> -O <sub>2</sub> Rotating Detonation Engine (226)<br><i>S. Connolly-Boutin*, E.Doyle, A. Côté, H. Fazal, A. Higgins, C. Kiyanda</i>                                                              |
| 11:25     | CO Time-History Measurements and Kinetic Modeling of Trimethyl Phosphate Pyrolysis (94)<br><i>K. Kanayama*, C. Grégoire, K. Maruta, E. Petersen, O. Mathieu, H. Nakamura</i>                                        | Effect of Preferential Diffusion, Activation Energy and Obstacles Separation Distance on the Acceleration of Premixed Flames (137)<br><i>L. de Azevedo*, A. Mendiburu, L. Fernandes</i>                                             | Geometric Modeling of Detonation Propagation and Re-Initiation over Obstacles (89)<br><i>R. Paknahad*, J. Crane</i>                                                                           | The Influence of High Sound Speed Confinement on Detonation Propagation in High Explosives (186)<br><i>M. Short*, C. Chiquete, S. Voelkel</i>                                                             | Effects of the Injection Inhomogeneity on the Detonation Propagation Speed in a Reflective Shuttlng Detonation Engine Using Gaseous Fuel and Oxidizer (246)<br><i>R. Sato*, H. Inoue, A. Kawasaki, K. Matsuoka, T. Nagaoka, Y. Oda, N. Itouyama, J. Kasahara, A. Matsuo</i> |
| 11:50     | Characterizing the Safety of Commercial Sodium-ion Cells and Modules (98)<br><i>D. R. R. Kannan*, V. Premnath, J. Jeevarajan, C. Lopez</i>                                                                          | Flame acceleration mechanisms to detonation in an obstacle-laden tube : Experiments and modelling (212)<br><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)<br><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)<br><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)<br><i>Y. Ryu*, N. Tsuboi, A. K. , Hayashi , T. Obara, X.-M. Tang</i>                 |                                                                                                                                                                                               | Detonation Performance of a High HMX-Content Polymer Bonded Explosive (182)<br><i>E. Anderson, S. Voelkel, M. Short*, R. Chicas, W. Chapman, C. Chiquete</i>                                              |                                                                                                                                                                                                                                                                             |
| 12:40     | LUNCH                                                                                                                                                                                                               |                                                                                                                                                                                                                                     |                                                                                                                                                                                               |                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                             |
| 13:00     | EXCURSION                                                                                                                                                                                                           |                                                                                                                                                                                                                                     |                                                                                                                                                                                               |                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                             |

| Thursday |                                                                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                                         |                                                                                                                                                                                   |                                                                                                                                                                                                                                |
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| 08:30    | Plenary Lecture: Amir Farooq, KAUST, Saudi Arabia<br><b>New perspectives on multi-mode and multi-scale shockwave dynamics</b><br><i>C140</i>                                                                     |                                                                                                                                                                                                        |                                                                                                                                                                                         |                                                                                                                                                                                   |                                                                                                                                                                                                                                |
| 09:30    | COFFEE BREAK 20 min                                                                                                                                                                                              |                                                                                                                                                                                                        |                                                                                                                                                                                         |                                                                                                                                                                                   |                                                                                                                                                                                                                                |
| Room     | C309                                                                                                                                                                                                             | C307                                                                                                                                                                                                   | C140                                                                                                                                                                                    | C308                                                                                                                                                                              | C240                                                                                                                                                                                                                           |
| Set R1   | Application of deep/machine learning to reactive systems                                                                                                                                                         | Flame behavior and instabilities                                                                                                                                                                       | Non-equilibrium effects in detonations 1                                                                                                                                                | Double cellular structure and inhibition                                                                                                                                          | Detonation Engine 9 (Oblique Detonation)                                                                                                                                                                                       |
| 09:50    | Detonation cell sizes in hydrogen-methane blends (171)<br><i>G. Bakalis*, Y. Lyu, B. Zhang, H.D Ng</i>                                                                                                           | Flame Behavior in Expanding Flow (22)<br><i>T. Tsuruda*, T. Daitoku, H. Osaka</i>                                                                                                                      | Experimental assessment of thermal non-equilibrium (NEQ) in H2-air detonations with emission spectroscopy (73)<br><i>H. Bilal, K. Chatelain*, D. Lacoste</i>                            | Stability of One-dimensional Detonation Driven by Lokta-Volterra Oscillating Chemical Schemes (128)<br><i>M. Faghih, R. Mevel*</i>                                                | Numerical Investigation of Assisted Initiation of Oblique Detonation Waves by Energy Deposition (93)<br><i>Z. Jiang, Z. Zhang*, Z. Chen, J. Hao, C.-Y. Wen</i>                                                                 |
| 10:15    | Development of an Automated Computer Vision Approach for Detonation Cellular Structure Analysis (179)<br><i>D. Jalontzki*, A. Zussman, S. Pendurkar, G. Sharon, Y. Kozak</i>                                     | Double shock-flame interactions and the induced flame instabilities (25)<br><i>X. Zhang*, T. Shen, H. Xiao</i>                                                                                         | Vibrational Nonequilibrium Modeling Framework for High-Speed Combustion Applications (84)<br><i>S. Voelkel*, M. Short</i>                                                               | Inhibition of Hydrogen-air Detonations using Organophosphorus Compounds (247)<br><i>A. Dahake, R. K. Singh, A. S. Karthik, A. V. Singh*</i>                                       | Boundary Layer Separation Effects on Viscous Oblique Detonations over Compression Corners (96)<br><i>X. Shao, Z. Zhang*, J. Hao, C.-Y. Wen</i>                                                                                 |
| 10:40    | Application of an Ensemble Kalman Filter With Gaussian Anamorphosis to a 1D Detonation Flow (268)<br><i>J. Hansen*, D. Brouzet, M. Ihme</i>                                                                      | Buoyancy limit and ascending velocity of lean syngas flames (148)<br><i>Y. Ballossier*, N. Chaumeix</i>                                                                                                | Idealized Detonation Modeling with Vibrational Nonequilibrium (85)<br><i>S. Voelkel*, M. Short</i>                                                                                      | Direct Detonation Initiation in Dimethyl Ether-Oxygen-Nitrogen-Carbon Dioxide Mixtures: Effect of Low-Temperature Chemistry and Ozone Addition (55)<br><i>Z. Huang, R. Mevel*</i> | Structure of Conical Oblique Detonation Waves at an Angle of Attack (210)<br><i>S.S. Abisileman*, R. Bielawski, V. Raman</i>                                                                                                   |
| 11:05    | Application of Convolutional Neural Networks for Predicting Explosion Pressures in Vented Systems with Obstacles (80)<br><i>C. Allen*</i>                                                                        | Dynamics of acoustically-induced boundary-layer flashbacks in a dump combustor (170)<br><i>J.-M. Klein*, A. Genot, A. Vincent-Randonnier, A. Mura</i>                                                  | A Temperature Non-Equilibrium Reactive Model for Detonation Hydrodynamics (206)<br><i>W. Morin*, J. G. McDonald, M.I. Radulescu</i>                                                     | Enhancing the Lean Detonability Limit of Hydrogen-Oxygen Detonations using Ozone (220)<br><i>R. Singh, A. Dahake, A. Karthik, A. Singh*</i>                                       | Influence of Inert Gas Boundaries on Detonation Propagation (181)<br><i>Y. Wahba*, X. Mi, C. Kiyanda, A. Higgins</i>                                                                                                           |
| 11:30    |                                                                                                                                                                                                                  |                                                                                                                                                                                                        | A molecular view of shock interactions and reflections with implications in gas-phase detonations (222)<br><i>A. M. Jayaraman*, E. Genter, H. Wang</i>                                  |                                                                                                                                                                                   |                                                                                                                                                                                                                                |
| 11:55    | LUNCH 1 h 30                                                                                                                                                                                                     |                                                                                                                                                                                                        |                                                                                                                                                                                         |                                                                                                                                                                                   |                                                                                                                                                                                                                                |
| Set R2   | Carbon free fuels - ammonia 2                                                                                                                                                                                    | Flame ignition                                                                                                                                                                                         | Non-equilibrium effects in detonations 2                                                                                                                                                | Detonation (re)initiation 2                                                                                                                                                       | Ramjets and Scramjets 1                                                                                                                                                                                                        |
| 13:25    | Investigation of NH3/CH4 Flame Structure and Dynamics in a Swirl Turbulent Non-Premixed Burner (40)<br><i>A. Morel*, T. Boushaki</i>                                                                             | Hot Gas Kernel Expansion Shape Caused by Contact-Break Discharges on Cadmium and Zinc Cathodes in a Hydrogen-Air Mixture (66)<br><i>D. Bratek*, C. Uber, E. Khan, B. Barbu, R. Methling</i>            | Non-Equilibrium Translational Effects and the Limits of Weak Detonations in Shock-to-Detonation Transition (160)<br><i>R. Murugesan*, M. I. Radulescu</i>                               | Sensitivity of Detonation Re-initiation at a Back-Facing step to Transverse Waves (184)<br><i>Y. Poroshyna*, G. Ciccarelli, S. Lau-Chapdelaine</i>                                | Numerical simulation of two-phase combustion in a scramjet (59)<br><i>F. Kissel, G. Ribert*, P. Domingo</i>                                                                                                                    |
| 13:50    | Experimental investigation of oxygen concentration effect on spherical turbulent flame propagation limits of ammonia-oxygen-nitrogen premixed flames (143)<br><i>Y. Xia, N. Hashimoto, O. Fujita*</i>            | Is there a cryogenic temperature limit for hydrogen deflagration flames? (158)<br><i>I. Kirillov*, V. Plaksin, B. Potapkin, I. Zaeve, A. Lebedev, M. Deminsky, V. Khorkov, M. Okun, D. Shirabaikin</i> | Shocks in n-dodecane/nitrogen mixtures: a molecular dynamics study (225)<br><i>E. Genter*, A. Jayaraman, A. Nobili, H. Wang</i>                                                         | Controlling Parameters for Detonation Re-initiation After Interaction with Cylinders in Hydrogen and Hydrocarbon Mixtures (262)<br><i>H. Yang*, M. I. Radulescu</i>               | Study of a Rotating Detonation Torch for Scramjet Engines (95)<br><i>M. Kakuda*, K. Norimatsu, S. Suzuki, S. Nishiura, N. Katsumura, N. Itouyama, K. Matsuoka, J. Kasahara, T. Kudo, A. Hayakawa, K. Kobayashi, S. Tomioka</i> |
| 14:15    | Reduced chemistry and differential diffusion effects in simulations of ammonia-hydrogen fuel blend (75)<br><i>G. Grassi, P. Domingo, L. Vervisch*</i>                                                            | Study on Effects of Low-Temperature Preheating on Ignition and Combustion of Weakly Caking Coal (166)<br><i>Z. Li*, S. Zhu, J. Hui</i>                                                                 | Numerical Modeling of Vibrational Nonequilibrium Detonations in Hydrogen-Oxygen Mixtures (240)<br><i>S. M. Hussain, A. S. Karthik, A. Dahake, R. K. Singh, A. V. Singh*</i>             | Detonation transmission experiments at large scale (203)<br><i>J. Melguizo-Gavilanes*, A. Pekalski</i>                                                                            | Effects of $\mu$ PDE-Driven Excitation on a Model Supersonic Combustor (254)<br><i>K.-H. Lee*, B.-K. Sung, S.W. Choi, G.-U. Mo, J.-Y. Choi</i>                                                                                 |
| 14:40    |                                                                                                                                                                                                                  | Effects of Fuel Nozzle Geometry on the Flammability Limits of Low-Swirl Biogas Diffusion Flames (155)<br><i>Madjid Birouk (University of Manitoba)*</i>                                                | The Translational Non-Equilibrium Structure of Inert Shock Waves and Triple Points with Account for Heat Fluxes (255)<br><i>E. Rice*, J. McDonald</i>                                   | Mechanisms of Detonation Re-initiation in a Narrow Channel at a Back-Facing Step (185)<br><i>Y. Poroshyna*, J. Loiseau, S. Lau-Chapdelaine, G. Ciccarelli</i>                     | Trajectory Analysis of Liquid Fuel Injected Normally to High-Enthalpy Supersonic Crossflows (257)<br><i>J. Sprunger*, N. Dreyer, K. Ahmed</i>                                                                                  |
| 15:05    | Main-Track Poster Session and Coffee (Main Hall)                                                                                                                                                                 |                                                                                                                                                                                                        |                                                                                                                                                                                         |                                                                                                                                                                                   |                                                                                                                                                                                                                                |
| Set R3   | Battery kinetics and safety 2                                                                                                                                                                                    | DDT 3                                                                                                                                                                                                  | Flame front structure and instabilities 2                                                                                                                                               | Dust flames and explosions                                                                                                                                                        | Imploding / jet detonation                                                                                                                                                                                                     |
| 15:25    | Understanding Ignition Mechanisms and Improving Temperature Boundary Condition for Lithium-Ion Battery Vent Gas Simulations (119)<br><i>N. A. Senarathna*, M.-A. Bérubé, P. Versailles, E. Robert, B. Savard</i> | Choked flame and its transition to detonation in an obstructed channel (107)<br><i>J. Fan*, M. Li, H. Xiao</i>                                                                                         | The Influence of Wall Conductivity on Flame Thermoacoustics in Rectangular Channels (120)<br><i>Z. Negrette*, S. Jackson, M. Short</i>                                                  | Investigating turbulence and turbulent flame propagation in dust clouds (237)<br><i>C. Proust*, M. Battikh, J. Daubech</i>                                                        | Numerical Simulations of Imploding Detonations (32)<br><i>L. Shi*, C.-Y. Wen</i>                                                                                                                                               |
| 15:50    | Preventing battery thermal runaway via electro-thermal characterization using impedance spectrum (167)<br><i>P. B. Singh*, J. J. Yoh</i>                                                                         | Experimental Comparison of Slow and Fast Gas Heating Processes to Reduce the Deflagration-to-Detonation Run-up Distance in Hydrogen-Air Detonations (135)<br><i>M. Alichejri*, D.A. Lacoste</i>        | Geometric Characteristics of Turbulent Premixed Methane-Air Flame in a Constant Volume Vessel and the Impact on Flame-Wall Interaction (124)<br><i>Y. Wang*, S. Jiang, M. Tanahashi</i> | Examining the effect of reactivity parameters S <sub>T</sub> R and $\chi$ on dust explosion venting (173)<br><i>C.R. Bauwens*, S. Dorofeev</i>                                    | Behavior of Imploding Detonation Waves in A Cylindrical Chamber (162)<br><i>K. Ishii*, H. Ueo</i>                                                                                                                              |
| 16:15    | Fundamental Considerations for the Design of Explosion Vents for Battery Energy Storage Systems (24)<br><i>C. Allen*, A. Brandl, A. Kerbl</i>                                                                    | Detonation Initiation by Reflection of a Fast-Flame at an Obstacle (208)<br><i>M. Moran*, G. Ciccarelli</i>                                                                                            | Low Lewis Number Flames Near a Porous-Plug burner: Stability, Dynamics and Limits of Existence (125)<br><i>D. Fernandez-Galisteo*, C. Jiménez, V. N. Kurdyumov</i>                      | The Role of Radiation on Spontaneous Ignition Waves in Coal Dust Clouds (215)<br><i>J. Aguilar*</i>                                                                               | Modeling and Analysis of the Planar Jet-Stabilized Detonation Waves (36)<br><i>C. Colby*, A. Poludnenko</i>                                                                                                                    |
|          |                                                                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                                         |                                                                                                                                                                                   |                                                                                                                                                                                                                                |
|          |                                                                                                                                                                                                                  |                                                                                                                                                                                                        | BANQUET                                                                                                                                                                                 |                                                                                                                                                                                   |                                                                                                                                                                                                                                |

| Friday |                                                                                                                                                                                                                                              |                                                                                                                                                                                                                  |                                                                                                                                                                                                                          |                                                                                                                                                                                                 |                                                                                                                                                                                       |
|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 08:30  | Plenary Lecture: Andrzej Pekalski, Shell U.K.<br><b>Learnings and advancements in understanding Vapour cloud explosions since Buncefield accident C140</b>                                                                                   |                                                                                                                                                                                                                  |                                                                                                                                                                                                                          |                                                                                                                                                                                                 |                                                                                                                                                                                       |
| 09:30  | COFFEE BREAK 20 min                                                                                                                                                                                                                          |                                                                                                                                                                                                                  |                                                                                                                                                                                                                          |                                                                                                                                                                                                 |                                                                                                                                                                                       |
| Room   | C309                                                                                                                                                                                                                                         | C307                                                                                                                                                                                                             | C140                                                                                                                                                                                                                     | C308                                                                                                                                                                                            | C240                                                                                                                                                                                  |
| Set F1 | Laser diagnostics - kinetics 3                                                                                                                                                                                                               | Carbon free fuels - safety                                                                                                                                                                                       | Detonation cell size                                                                                                                                                                                                     | Detonation structure                                                                                                                                                                            | Ramjets and Scamjets 2                                                                                                                                                                |
| 09:50  | <b>High-Temperature Absorption Coefficient Measurement of NH<sub>2</sub> at 597 nm (47)</b><br><i>M. Abulail*, C. M. Grégoire, O. Mathieu, E. L. Petersen</i>                                                                                | <b>Ignition Limits of Hydrogen-Diluted Jets in Shock Tubes with a Partially Opened Diaphragm (121)</b><br><i>M. Alves, O. Nassar, S. Kudriakov, E. Studer, L. Ishay, Y. Kozak</i>                                | <b>The Correlation Between Cell Structure and Detonation Stability Parameters Across Multiple Fuels and Diluents (86)</b><br><i>D. Lont*, S. Jackson</i>                                                                 | <b>Detonation Structural Modulation Using Waveguides: An Experimental Study (232)</b><br><i>R. Punna*, G. Ciccarelli, J. Crane</i>                                                              | <b>Baffled-Tube Ram Accelerator Operation with Aluminum Projectiles (126)</b><br><i>J. Correy, J. Clevenger, C. Knowlen*, A. Higgins</i>                                              |
| 10:15  | <b>Validation of the polyne mechanism in soot formation (133)</b><br><i>T. Viola*, L. Carneiro Piton, M. Idir, N. Chaumeix, A. Comandini</i>                                                                                                 | <b>Experimental flammability limits of H<sub>2</sub>-CO-CO<sub>2</sub>-air mixtures and kinetic model simulation (139)</b><br><i>A. P. Martinez*, M. Comito, A. Mendy, A. Bentaib, A. Comandini, N. Chaumeix</i> | <b>Comparison of detonation cell size models for alternative fuel blends composed of H<sub>2</sub>, CO, CH<sub>4</sub> (141)</b><br><i>A. Gupta*, A. Poyet, R. Stowe, V. Rodriguez, A. Chinnayya, S. Lau-Chapdelaine</i> | <b>Experimental and calculated detonation cells in gaseous ethanol-oxygen mixtures (72)</b><br><i>T. Fessard*, L. Vilasi, V. Rodriguez, P. Vidal</i>                                            | <b>Experimental Investigation of Hollow-Body Ramjet Rotating Detonation Engine for Hypersonic Propulsion (266)</b><br><i>Z. White*, A. Kotler, M. Thornton, J. Lahm, K. Ahmed</i>     |
| 10:40  | <b>Experimental and Modeling Study of NH<sub>3</sub>/C<sub>2</sub>H<sub>4</sub> Combustion (127)</b><br><i>O. Mathieu*, M. Abulail, C. M. Grégoire, A. Mousse-Rayaleh, A. Palomino, N. Chaumeix, H. Hashemi, P. Glarborg, E. L. Petersen</i> | <b>Enclosed Ammonia Vapor Cloud Explosion Testing (271)</b><br><i>P. Diakow, D. Malik, V. Martinez, O. Rodriguez, J. K. Thomas</i>                                                                               | <b>Detonation Structure at Realistic Pressures: a Differential Diagnosis for the Discrepancy between Numerical Simulations and Experiments (238)</b><br><i>A. Poludnenko*, A. Ghosh, S. S. Dammati</i>                   | <b>Experimental and Numerical Analysis of the Cellular Detonation Structure for Ethylene-Oxygen Mixtures (239)</b><br><i>A. Dahake, A. S. Karthik, S. M. Hussain, R. K. Singh, A. V. Singh*</i> | <b>Fire dynamics</b>                                                                                                                                                                  |
| 11:05  | <b>Comprehensive Study of 1,1-Diethoxypropane Oxidation: Shock Tube Experiments, Laser Speciation, and Kinetic Model Development (190)</b><br><i>M. Z. Ali Khan*, C. Cao, T. A. Kashif, A. Farooq</i>                                        | <b>Detection of small burning hydrogen leaks at open-air industrial installations (214)</b><br><i>J. Brunzendorf*</i>                                                                                            | <b>Numerical Investigation of the Detonation Cell Size in Hydrogen and Hydrocarbons with Complex Multi-step Kinetics (244)</b><br><i>A. Ghosh*, S. S. Dammati, A. Poludnenko</i>                                         | <b>Study of Detonation in Isopropyl Nitrate-Air Mixtures (56)</b><br><i>X. Huang, V. Sankar, K. Chatelain, R. Mevel*, D. Lacoste</i>                                                            |                                                                                                                                                                                       |
| 11:30  |                                                                                                                                                                                                                                              |                                                                                                                                                                                                                  | <b>Comparison of Soot-foil and Velocity Map Measurements in Gaseous Detonations (251)</b><br><i>D. R. Hart, L. Berson, R. Hytovich, K. A. Ahmed</i>                                                                      | <b>3D Numerical Simulation on Shock Front Structure of Hydrogen/Air Spinning Detonation (202)</b><br><i>H. Okuda*, N. Tsuboi, A.K. Hayashi</i>                                                  | <b>Experimental Study on the Laminar Flame Speed of Hydrogen Doped with Trimethyl Phosphate (217)</b><br><i>M. Nielsen*, U. Costa, J. Jacobs, O. Mathieu, E. Petersen</i>             |
| 11:55  | LUNCH 1 h 30                                                                                                                                                                                                                                 |                                                                                                                                                                                                                  |                                                                                                                                                                                                                          |                                                                                                                                                                                                 |                                                                                                                                                                                       |
| Set F2 |                                                                                                                                                                                                                                              |                                                                                                                                                                                                                  | Detonation (numerical)                                                                                                                                                                                                   |                                                                                                                                                                                                 | Propellants 4                                                                                                                                                                         |
| 13:25  |                                                                                                                                                                                                                                              |                                                                                                                                                                                                                  | <b>Formation conditions of double cellular detonation in C<sub>2</sub>H<sub>4</sub>/O<sub>2</sub>/O<sub>3</sub>/N<sub>2</sub> mixtures with two-stage reactions (23)</b><br><i>J. Sun*, Z. Chen</i>                      |                                                                                                                                                                                                 | <b>Investigation of Thermal Decomposition of Solid Propellant Components by Online Atmospheric Pressure Photoionization Mass Spectrometry (38)</b>                                    |
| 13:50  |                                                                                                                                                                                                                                              |                                                                                                                                                                                                                  | <b>A numerical high-speed reacting flow model based on the AMReX frame (140)</b><br><i>Q. Wen, Y. Zhang, X. Wang, H. Wen</i>                                                                                             |                                                                                                                                                                                                 | <b>Numerical Simulation Study of the Thermal Response Process of GAP Solid Propellant under Nozzle Structural Constraints (51)</b><br><i>J. Yang, H. Xia, X. Wang, S. Guo, Y. Wu*</i> |
| 14:15  |                                                                                                                                                                                                                                              |                                                                                                                                                                                                                  | <b>GPU-Accelerated High-Performance Numerical Simulation of Detonation Using Detailed Chemical Kinetics (175)</b><br><i>X. Wang, Y. Zhang, Q. Wen, H. Wen, B. Wang</i>                                                   |                                                                                                                                                                                                 | <b>Investigation of Cook-Off Response Characteristics of GAP Propellant under Structural Constraints (50)</b><br><i>S. Guo, Y. Wu*, J. Wang, F. Jin, X. Wang</i>                      |
| 14:40  |                                                                                                                                                                                                                                              |                                                                                                                                                                                                                  | <b>Inhibition of detonation (221)</b><br><i>N. Smirnov, E. Mikhilchenko*, E. Skryleva</i>                                                                                                                                |                                                                                                                                                                                                 |                                                                                                                                                                                       |
|        |                                                                                                                                                                                                                                              |                                                                                                                                                                                                                  |                                                                                                                                                                                                                          |                                                                                                                                                                                                 |                                                                                                                                                                                       |
| 15:30  | Farewell party<br>Tabaret (TBT) 112                                                                                                                                                                                                          |                                                                                                                                                                                                                  |                                                                                                                                                                                                                          |                                                                                                                                                                                                 |                                                                                                                                                                                       |