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ICDERS 2023

The 29th International Colloquium on
the Dynamics of Explosions and Reactive Systems

July 23 – 28, 2023
SNU Siheung, Korea

KOSCO

PROGRAM AT A GLANCE

MONDAY, JULY 24		TUESDAY, JULY 25		WEDNESDAY, JULY 26			THURSDAY, JULY 27		FRIDAY, JULY 28	
08:30 -09:00	**Opening Ceremony**									
09:00 -10:00	**Plenary Lecture**	09:00 -10:00	**Plenary Lecture**	09:00 -10:40	**Oral Session**		09:00 -10:00	**Plenary Lecture**	09:00 -10:15	**Oral Session**
10:00 -10:30	Coffee break	10:00 -10:30	Coffee break	10:40 -11:10	Coffee break		10:00 -10:30	Coffee break	10:15 -10:45	Coffee break
10:30 -12:10	**Oral Session**	10:30 -12:10	**Oral Session**	11:10 - 12:50	**Oral Session**	**WIP Poster** 10:40 -13:00	10:30 -12:10	**Oral Session**	10:45 -12:25	**Oral Session**
12:10 -13:50	Lunch	12:10 -13:50	Lunch	12:50 -13:30	Lunch		12:10 -13:50	Lunch	12:25 - 14:00	**Farewell Party**
13:50 -15:30	**Oral Session**	13:50 -15:30	**Oral Session**	13:30- 21:30	**Excursion with dinner**		13:50 -15:05	**Oral Session**		
15:30 -16:00	Coffee break	15:30 -16:45	**Poster Session and Coffee**				15:05 -16:20	**Poster Session and Coffee**		
16:00 -18:05	**Oral Session**	16:45 -18:00	**Oral Session**				16:20 -18:00	**Oral Session**		
18:50 - 20:50	**Young Mixer**						19:00 -22:00	**Banquet**		

SUNDAY, JULY 23, 18:00-20:00
Welcome Reception (Lobby of the Convention Center (2F), SNU Siheung)

DAILY PROGRAM

SUNDAY, JULY 23

Time	Convention Hall A	Convention Hall B	Lecture Hall	Meeting Room 2	Meeting Room 3
16:00-20:00	**Registration** (Lobby of the Convention Center (1F), SNU Siheung)				
18:00-20:00	**Welcome Reception** (Lobby of the Convention Center (2F), SNU Siheung)				

MONDAY, JULY 24

Time	Convention Hall A	Convention Hall B	Lecture Hall	Meeting Room 2	Meeting Room 3
07:30-18:00	**Registration** (Lobby of the Convention Center (1F), SNU Siheung)				
08:30-09:00	**Opening Ceremony** OPENING REMARKS **Yoh, Jai-ick (Jack)** (Chair, the Host Committee of ICDERS 2023) WELCOMING REMARKS **Eric L. Petersen** (President, IDERS) CONGRATULATORY REMARKS **Kim, Jae Young** (Executive Vice President for Research, Seoul National University) PROGRAM INTRODUCTION **Scott Jackson** (Chair, the Program Committee of ICDERS 2023)				
09:00-10:00	**Plenary Lecture** **Venkat Raman** (University of Michigan, USA) Convention Hall B, Chair: S. I. Jackson				
10:00-10:30	Coffee break				
10:30-12:10	**RDE Combustors** Chairs: S. Kim, K. Ishii	**Chemical Reaction Kinetics 1** Chairs: M. Fikri, C. Gregoire	**Detonation Cellular Dynamics 1** Chairs: G. Ciccarelli, H. D. Ng	**Metalized Reactions 1** Chairs: E. Anderson, X. Mi	**Fire Dynamics 1** Chairs: L. Boeck, A. Sanchez
12:10-13:50	Lunch				
13:50-15:30	**RDE Flowfield Effects** Chairs: M. Gamba, J. Kasahara	**Chemical Reaction Kinetics 2** Chairs: J. Herzler, H. Nakamura	**Detonation Structure 1** Chairs: E. Dzieminska, P. Vidal	**Detonations and Shocks with Particles 1** Chairs: J. Melguizo-Gavilanes, E. Oran	**Fire Dynamics 2** Chairs: R. Bauwens, S. Dorofeev
15:30-16:00	Coffee break				
16:00-18:05	**RDE Liquid Fuels** Chairs: J. Crane, V. Raman	**Catalysts and Inhibitors 1** Chairs: M. Luong, H. D. Ng	**DDT 1** Chairs: S. Maeda, S. Voelkel	**Detonation Spectroscopy** Chairs: R. Hanson, I. Kirillov	**Laminar Flame Velocity** Chairs: N. Chaumeix, Y.-C. Chien
18:50-20:50	**Young Mixer** (for students, postdocs, and young researchers)				

TUESDAY, JULY 25

Time	Convention Hall A	Convention Hall B	Lecture Hall	Meeting Room 2	Meeting Room 3
08:00-18:00	**Registration** (Lobby of the Convention Center (1F), SNU Siheung)				
09:00-10:00	**Plenary Lecture** **Nabiha Chaumeix** (CNRS ICARE, France) Convention Hall B, Chair: M. Fikri				
10:00-10:30	Coffee break				
10:30-12:10	**RDE Mode Analysis** Chairs: J. Y. Choi, A. Sow	**Flames in Porous Media** Chairs: Z. Chen, I. Kirillov	**Detonation Structure 2** Chairs: C. Chiquete, K. Hayashi	**Novel Reacting Models** Chairs: Y. Morii, C. Huete	**Flames with Particulates 1** Chairs: O. Mathieu, P. Utkin
12:10-13:50	Lunch				
13:50-15:30	**RDE Heat Analysis and Management** Chairs: M. Gamba, J. Kasahara	**Numerical Turbulent Flows** Chairs: K. Maruta, V. Raman	**Detonation Cellular Dynamics 2** Chairs: C. Chiquete, V. Monnier	**Flame Theory** Chairs: C. Huete, F. Marra	**Flames with Particulates 2** Chairs: D. Fernández-Galisteo, J. J. Yoh
15:30-16:45	Main-Track Poster Session and Coffee				
16:45-18:00	**Diagnostic Methods** Chairs: J. Herzler, J. I. Ryu	**Battery Kinetics 1** Chairs: S. Dorofeev, C. Fouchier	**Ignition** Chairs: D. Martinez-Ruiz, M. H. Wu	**Hele-Shaw Flame Dynamics** Chairs: F. Rodriguez, H. D. Ng	**Turbulent Flame Structure** Chairs: A. Sanchez, C. S. Yoo

WEDNESDAY, JULY 26

Time	Convention Hall A	Convention Hall B	Lecture Hall	Meeting Room 2	Meeting Room 3
08:00-13:30	**Registration** (Lobby of the Convention Center (1F), SNU Siheung)				
09:00-10:40	**RDE Wave Stability** Chairs: J. Y. Choi, M. Kawalec	**Flame Structure 1** Chairs: F. Marra, N. Chaumeix	**Detonation Diffraction** Chairs: M. Short, M. H. Wu	**Simplified Detonation Models** Chairs: X. Shi, S. Voelkel	**Flame Instabilities 1** Chairs: K. Maruta, C. H. Sohn
10:40-11:10	Coffee break				
10:40-13:00	WIP Posters and Coffee				
11:10-12:50	**RDE Modeling** Chairs: R. Deiterding, K. Matsuoka	**Chemical Reaction Kinetics 3** Chairs: R. Hanson, E. Petersen	**Detonation Cellular Dynamics 3** Chairs: L. Bauwens, G. Ciccarelli	**Analysis of Explosions and Mitigation Strategies 1** Chairs: R. Bauwens, J. Thomas	**Condensed-Phase Detonation and Burning** Chairs: A. Chinnayya, J. Melguizo-Gavilanes
12:50-13:30	Lunch				
13:30-21:30	**Excursion with dinner**				

THURSDAY, JULY 27

Time	Convention Hall A	Convention Hall B	Lecture Hall	Meeting Room 2	Meeting Room 3
08:00-18:00	**Registration** (Lobby of the Convention Center (1F), SNU Siheung)				
09:00-10:00	**Plenary Lecture** **Kaoru Maruta** (Tohoku University, Japan) Convention Hall B, Chair: J. Y. Choi				
10:00-10:30	Coffee break				
10:30-12:10	**Ramjet and Scramjet Combustors 1** Chairs: R. Deiterding, S. Voelkel	**Kinetic Analysis** Chairs: Z. Chen, J. I. Ryu	**DDT 2** Chairs: E. Dzieminska, V. Rodriguez	**Analysis of Explosions and Mitigation Strategies 2** Chairs: C. Fouchier, T. Skjold	**Ammonia Flames 1** Chairs: O. Mathieu, H. Nakamura
12:10-13:50	Lunch				
13:50-15:05	**Detonations with Losses** Chairs: A. Chinnayya, S. I. Jackson	**Battery Kinetics 2** Chairs: C. Gregoire, M. Fikri	**Propellant Combustion** Chairs: E. Anderson, J. Garno	**Detonation Initiation Concepts** Chairs: A. Matsuo, V. Monnier	**Ballistics** Chairs: N. Itouyama, K. Matsuoka
15:05-16:20	Main-Track Poster Session and Coffee				
16:20-18:00	**Ramjet and Scramjet Combustors 2** Chairs: I. S. Jeung, Y. Morii	**Kinetic Algorithms** Chairs: J. Garno, C. S. Yoo	**Detonation Initiation via Focusing** Chairs: L. Bauwens, P. Vidal	**Detonation in Nonuniform Conditions** Chairs: R. Mevel, E. Oran	**Ammonia Flames 2** Chairs: N. Itouyama, E. Petersen
19:00-22:00	**Banquet**				

FRIDAY, JULY 28

Time	Convention Hall A	Convention Hall B	Lecture Hall	Meeting Room 2	Meeting Room 3
08:00-12:30	**Registration** (Lobby of the Convention Center (1F), SNU Siheung)				
09:00-10:15	**RDE Thrust** Chairs: M. Kawalec, V. Rodriguez	**Flame Structure 2** Chairs: K. Chatelain, M. Luong	**Detonation Initiation with Diffraction** Chairs: L. Boeck, A. Matsuo	**Novel Facilities and Methods** Chairs: A. Ferris, J. J. Yoh	**Detonations and Shocks with Particles 2** Chairs: X. Mi, F. Rodriguez
10:15-10:45	Coffee break				
10:45-12:25	**DDT 3** Chairs: A. K. Hayashi, S. Maeda	**Flame Instabilities 2** Chairs: S. Kim, D. Fernández-Galisteo	**Detonation Structure 3** Chairs: M. Radulescu, M. Short	**Metalized Reactions 2** Chairs: J. Thomas, P. Utkin	**Jet Ignition** Chairs: I. S. Jeung, T. Skjold
12:25-14:00	**Farewell Party**				

TECHNICAL PROGRAM

PLENARY SPEAKERS

MONDAY, JULY 24, 09:00-10:00

Venkat Raman

Professor
Dept. of Aerospace Engineering, University of Michigan, USA

BIOGRAPHY

Venkat Raman received his PhD from Iowa State University in 2003 in the department of chemical engineering. He was a NASA/Center for Turbulence Research Postdoctoral Fellow at Stanford University from 2003-2004, and a research associate in the Center for Integrated Turbulence Simulations from 2004-2005.
From 2005-2014, he was on the faculty of Aerospace Engineering and Engineering Mechanics Department at The University of Texas at Austin, initially as an assistant professor (2005-2011) and later as tenured associate professor (2011-2014).
Raman received an NSF CAREER award in 2008, a distinguished paper award at the International Combustion Symposium in 2013, and the Moncrief Grand Challenge Award in 2013. He held the Eli. H and Ramona Thornton Centennial Fellow in Engineering at UT Austin from 2013-2014.

Progress in the Computational Modeling and Understanding of Gaseous and Liquid-fueled Detonation Engines

Detonation engines, using continuous spinning or rotating waves, are finding use in a broad spectrum of propulsion applications. While research in this area span more than five decades, details of the complex detonation process have been emerging only in the last couple of decades. Such engines involve the three-dimensional interplay of flow geometry and unsteady fuel/air injection, stratified mixtures, and complex wave dynamics including multiple and even counter-propagating structures. Due to the multiscale nature of these problems, computational modeling using even the most powerful computing systems still remains a challenge. In this talk, progress in the detailed representation of single and two-phase detonation configurations, insights learnt, and key challenges are discussed.

TUESDAY, JULY 25, 09:00-10:00

Nabiha Chaumeix

Director of R&D at CNRS, France

BIOGRAPHY

Dr. Nabiha CHAUMEIX, director of ICARE, a full-body CNRS laboratory, has a Ph.D. in mechanical engineering (University of Orléans, 1993). She was president of the Institute of Dynamics of Explosions and Reactive Systems (IDERS, 2017-2022) and is actually deputy director of the French Research Network on Soot. Dr Chaumeix has over 25 years of experience in the flame dynamics, explosions safety and combustion chemical kinetics. The research developed by Dr Chaumeix is related to: (i) high temperature chemical kinetics using shock tubes and has devoted more than a decade in the study of soot formation from heavy fuels; (ii) the determination of the combustion fundamental properties such as flammability limits, laminar flame velocities, auto-ignition delay times, detonation characteristics (cell size, detonation speed, etc.) and the development of detailed chemical kinetics applicable to these phenomena; (iii) assessment of Safety explosion criteria with the detailed study of flame acceleration covering both subsonic and supersonic flames. The research is developed in the framework of National projects (ANR- HYDROMEL, MITHYGENE, IRSIS, SYTCOM, PHYSSA, PEPR-H2-ESKHYMO & AIDHY), European projects (SiA-TEAM, ARCHER, AMHYCO, FUN-PM, SASPAM-SA), International projects (EIG CONCERT-JAPAN 2021-STACY) and in several projects with different industries and institutions (TotalEnergies, IRSN, EDF, AREVA, Air Liquide, CNES, CEA, …etc.).

Role of the Chemical Kinetics on the Assessment of Explosions an Their Mitigation

THURSDAY, JULY 27, 09:00-10:00

Kaoru Maruta

Professor
Director, Institute of Fluid Science, Tohoku University, Japan

BIOGRAPHY

Kaoru Maruta received his Ph.D. in mechanical engineering from Sophia University in 1993. He is Professor, Director of the Institute of Fluid Science, Tohoku University, Japan.

Prof. Maruta's research interests include sustainable fuels, their kinetics and energy conversion in the areas of near limit and micro-scale combustion, microgravity combustion and high exergy efficiency combustion, hyper lean burn SI engine technology and fire safety for battery electrolyte and refrigerants.

He has published more than 130 refereed journal articles. He served as a Program Co-Chair of the Thirty Fourth International Symposium on Combustion at Warsaw, Poland (2012) and is a founding fellow of the Combustion Institute. Currently, he serves on the Board of Directors of the Combustion Institute and the Institute for Dynamics of Explosions and Reactive Systems. He is the Chair of the Japanese Section of the Combustion Institute. He serves as an Associate Editor of Combustion Science and Technology and one of the Editorial Board members of Combustion Explosion and Shock Waves, and Progress in Energy and Combustion Science. He has received several awards including Young Investigator Award of the First Asia-Pacific Conference on Combustion (1999), Best Paper Award from the Japanese Section of the Combustion Institute (2011), Ichimura Academic Award (2013) and Prize of the Minister of MEXT, Japan (2015).

Combustion Fundamentals for Future Hyper Lean Burn Spark Ignition Engine Applications: Effects of fuel properties on lean ignition limits and knock onset

After the achievements of SIP "Innovative combustion" project (2014-2019), its successor project (2019-present) is underway in Japan to improve the efficiency of SI engines using lean combustion technology. Several Japanese automakers and universities were collaborating in the former project that achieved a net thermal efficiency of 51.5%, and in the current project the aim is to achieve a net thermal efficiency 60% in the near future. In this presentation, we will report the results of the investigation of two topics directly related to the final engine efficiency, (1) lean ignition limit and (2) knock onset condition, using basic combustion methodologies without using engines, and based on various engine test data released by the project and other related organizations. First, a brief overview of the above projects will be presented, followed by our results of turbulent ignition experiments and numerical analysis on the mechanism of lean ignition limit and its dependence on fuel characteristics. Then, the results of the study on the influence of fuel characteristics on the knock onset condition will be presented, combining our DNS for a published experiment and our theoretical and numerical considerations.

TECHNICAL PROGRAM

MONDAY, JULY 24					
ROOM	CONVENTION HALL A	CONVENTION HALL B	LECTURE ROOM	MEETING ROOM 2	MEETING ROOM 3
9:00	Plenary Lecture: **Venkat Raman** (University of Michigan, USA) **Progress in the Computational Modeling and Understanding of Gaseous and Liquid-fueled Detonation Engines** Convention Hall B, Chair: S. I. Jackson				
10:00	Coffee break				
Set M1	**RDE Combustors** Chairs: S. Kim, K. Ishii	**Chemical Reaction Kinetics 1** Chairs: M. Fikri, C. Gregoire	**Detonation Cellular Dynamics 1** Chairs: G. Ciccarelli, H. D. Ng	**Metalized Reactions 1** Chairs: E. Anderson, X. Mi	**Fire Dynamics 1** Chairs: L. Boeck, A. Sanchez
10:30	**Numerical Analysis of the Effect of Combustor Length on Cylindrical Rotating Detonation Engine with Diverging Channel (178)** T. Sada, A. Matsuo, E. Shima, N. Itouyama, A. Kawasaki, K. Matsuoka, J. Kasahara	**Characterizing Strong Ignition Overpressure in Oxy-Methane Combustion Experiments (142)** M. G. Sandberg, M. Turner, E. Petersen	**Graph theory, geometric probabilities and a representative width for three-dimensional detonation cells (8)** V. Monnier, P. Vidal, V. Rodriguez, R. Zitoun	**Combustion of Metallic Iron in Solid Propellants (327)** J. C. Thomas, G. Lukasik, F. A. Rodriguez, W. Kulatilaka, E. Petersen	**Effects of Equivalence Ration on the Fire Characteristics of Kerosene/Air Flame Impinged by Composite Materials (23)** B. A. Manescau, R. Ogabi, K. Chetehouna
10:55	**Operation Characteristics of a Throatless Rotating Detonation Engine with Diverging Channel (189)** K. Nakata, T. Kimura, K. Ishihara, N. Itouyama, K. Matsuoka, J. Kasahara, A. Kawasaki, H. Watanabe, A. Matsuo, I. Funaki, K. Higashino, V. Athmanathan, J. Braun, T. Meyer, G. Paniagua	**Ignition delay of ultra-lean hydrogen/air mixtures (254)** P. N. Krivosheyev, O. Penyazkov, K. Sevrouk, A. Skilandz, A. M. Tereza	**Divergent Flow Effects in Cellular Detonations (67)** S. Voelkel, M. Short, C. Chiquete	**Mesoscale surface deflagration modeling of metalized solid propellants (16)** H. S. Choi, J. J. Yoh	**Flame Spread over Inclined Electrical Wire with Applied AC Electric Fields (74)** Z. Li, J. H. Kim, Y. C. Zhang, J. Park, S. H. Chung

MONDAY, JULY 24					
ROOM	CONVENTION HALL A	CONVENTION HALL B	LECTURE ROOM	MEETING ROOM 2	MEETING ROOM 3
11:20	Experimental Investigation on the Ignition Characteristics of Scramjet Combustor Using a Micro Pulse Detonation Engine (291) M. S. Kim, E. S. Lee, H. S. Han, J. Y. Choi	Shock-Tube Study of Lubricating Oil Ignition Delay Times (91) M. Abulail, S. P. Cooper, M. G. Sandberg, E. L. Petersen	Predicting the Detonation Cell Size of Biogas-Oxygen Mixture Using Machine Learning Models (68) S. Siatkowski, K. Wacko, J. Kindracki	Factors influencing the Burning Characteristics of Electrically Controlled Solid Propellant with Various Metal Content (150) D. Lim, G. Kanagaraj, R. Rajak, J. J. Yoh	Measurement of Internal Structural Changes during Pyrolysis of Wooden Pellet under Radiant Heating Field using Synchrotron X-ray CT (301) T. Daitoku, T. Tsuruda
11:45	Study on the Effect of Combustor Scale in Annular RDEs (179) M. Miyashita, A. Matsuo, E. Shima, N. Itouyama, A. Kawasaki, K. Matsuoka, J. Kasahara	Ignition Delay Study of Low Reactivity Fuel Blends (121) K. W. Min, K. S. Kim, T. H. Lee	Uncertainty on Predicted Detonation Cell Width (86) X. Huang, Z. Weng, R. Mevel, K. P. Chatelain, J. Vargas, J. Melguizo-Gavilanes, D. Lacoste	Thermal Analysis of Electrically Controlled Solid Propellant with Different Metal Additives (165) R. Rajak, D. Lim, G. Kanagaraj, J. Oh, J. J. Yoh	Near-Infrared Visualization of Flame Spread in a Narrow Space (197) K. Ikebe, T. Tsuruda, T. Daitoku
12:10	Lunch				
Set M2	RDE Flowfield Effects Chairs: M. Gamba, J. Kasahara	Chemical Reaction Kinetics 2 Chairs: J. Herzler, H. Nakamura	Detonation Structure 1 Chairs: E. Dzieminska, P. Vidal	Detonations and Shocks with Particles 1 Chairs: J. Melguizo-Gavilanes, E. Oran	Fire Dynamics 2 Chairs: R. Bauwens, S. Dorofeev
13:50	Timescale Analysis for a Standard Rotating Detonation Rocket Engine (100) R. Dave, J. Burr, M. C. Ross, J. W. Bennewitz	Homogeneity of Propane/Air Ignition in Shock Tubes: Ignition Delay Times and High-Speed Imaging (181) D. Nativel, S. P. Cooper, M. G. Sandberg, M. Abulail, D. J. Mohr, M. K. Hay, M. Fikri, W. D. Kulatilaka, E. L. Petersen, C. Schulz	Thermonuclearly-Driven Cellular Structure of Detonation on the Surface of a White Dwarf (256) K. Iwata, K. Maeda	The Separation of Mass, Momentum and Heat Transfer Scales in Particle-Laden Detonations (123) D. Martínez-Ruiz, C. Huete, A. L. Sánchez	Local Burning Behavior of Wind-Driven Flames under the Influence of Mixed-Convective Turbulent Flow Conditions (308) A. Srivastava, A. V. Singh
14:15	Interaction Between Primary and Secondary Waves in a Rotating Detonation Rocket Engine (173) G. Vignat, D. Brouzet, M. Bonanni, M. Ihme	Special Cases Affecting the Low-Temperature Ignition of Evaporated Hydrocarbon-Air Mixtures in a Rapid Compression Machine (192) V. V. Leschevich, O. G. Penyazkov, S. Y. Shimchenko	Viscous and Thermal Boundary Layers in Detonation Driving Zone (182) H. Watanabe, A. Matsuo, A. Chinnayya, N. Itouyama, K. Matsuoka, J. Kasahara	High-Fidelity Simulations of Shock Induced Break-up of Droplets (245) R. J. Bielawski, V. Raman	Effect of Cavitation Inside a Nexgen Burner Nozzle on Flame Dynamics (24) L. Lamoot, B. Manescau, K. Chetehouna

MONDAY, JULY 24					
ROOM	CONVENTION HALL A	CONVENTION HALL B	LECTURE ROOM	MEETING ROOM 2	MEETING ROOM 3
14:40	Numerical and Theoretical Studies of a Hydrogen-Air Rotating Detonation Engine (41) C. Jiang, Y. Wang	Experimental and Numerical Investigation of Shock Wave-Based Methane Pyrolysis for Clean H2 Production (143) A. Ferris, P. Biswas, A. Panda, L. Zaczek, R. Choudhary, R. Hanson	Effect of a Spatially Distributed Reaction Zone on Regular and Mach Reflection of a Detonation (134) M. Short, C. Chiquete, S. Voelkel	Initiation Characteristics of Wedge-Induced Oblique Detonations in Partially Pre-Vaporized n-Heptane Sprays (209) H. Teng, C. Tian, M. Zhao, P. Yang	Time Variation of Smoke Behavior and Images' File Size (212) T. Konda, T. Tsuruda, T. Daitoku
15:05	Numerical Study on Effect of Inner Cylinder on Flow Field of Carbon/Air Rotating Detonation Engines (25) W. Zhu, Y. Wang	Induction and Reaction Time Measurements in Hydrogen-Air Mixtures for a Wide Stoichiometry Range at High Temperatures and Pressures (203) Y. A. Baranyshyn, O. Penyazkov, K. Sevrouk, V. V. Kuzmitski	High-Fidelity Simulations of Oblique Detonation Waves (250) S. S. Abisleiman, R. J. Bielawski, V. Raman	Study on aluminum particle/oxygen or air two-phase detonation (218) A. Koichi Hayashi	Heat Transfer Characteristics of Turbulent Boundary Layer Flames Stabilized under a Mixed-Convective Environment (296) A. Srivastava, S. Kumar, A. V. Singh
15:30	Coffee break				
Set M3	RDE Liquid Fuels Chairs: J. Crane, V. Raman	Catalysts and Inhibitors 1 Chairs: M. Luong, H. D. Ng	DDT 1 Chairs: S. Maeda, S. Voelkel	Detonation Spectroscopy Chairs: R. Hanson, I. Kirillov	Laminar Flame Velocity Chairs: N. Chaumeix, Y.-C. Chien
16:00	Air-Breathing Rotating Detonation Engine Supplied with Liquid Fuels (247) W. Perkowski, M. Kawalec, A. Bilar, M. Augustyn, E. Zocłońska, P. Wolański	Detonation Inhibition using Retardant Weight Analysis for Halogenated Compounds (126) R. K. Singh, A. V. Singh, A. Dahake	Effects of SF6 Jet-in-Crossflow on Deflagration-to-Detonation Transition of Premixed Methane-Oxygen (19) J. Cheng, B. Zhang	Simultaneous Visualization of Induction and Reaction Zones by Planar Laser Induced Fluorescence in Hydrogen Detonations (120) S. B. Rojas Chavez, K. P. Chatelain, M. Alicherif, D. Lacoste	Laminar Burning Velocities of Propane-air Mixtures at Elevated Temperatures and Pressures (75) V. Shinde, A. M. Fulzele, S. Kumar

MONDAY, JULY 24					
ROOM	CONVENTION HALL A	CONVENTION HALL B	LECTURE ROOM	MEETING ROOM 2	MEETING ROOM 3
16:25	Experimental Study on Propagation Mode of Cylindrical Rotating Detonation Engine with Liquid Ethanol-Liquid Nitrous Oxide (145) T. Sato, K. Ishihara, K. Nakata, T. Kimura, Y. Kikuchi, K. Nakajima, S. Sawada, M. Inada, R. Sakata, Y. Suzuki, Y. Oda, B. Itouyama, K. Matsuoka, J. Kasahara, A. Kawasaki, H. Watanabe, H. Okano, T. Tada, F. Fujiura, M. Namera, R. Nakazawa, H. Eguchi, D. Nakata, M. Uchiumi, A. Matsuo, I. Funaki	An Experimental and Computational Study on the Impact of Key Parameters on Methane Steam Reforming over a Ni/Al2O3 Catalyst (314) J. Richter, F. Rachow, E. Charlafti, T. Karg, V. Günther, N. Roth, F. Mauss	DDT Run-up Distance for Stoichiometric Hydrogen-Methane-Oxygen (62) G. Ciccarelli, C. Pan, X. Wang	Laser Absorption Characteristics of a Simulated Rotating Detonation Rocket Engine (72) M. C. Ross, J. Burr, A. Karagozian	Numerical Studies on the Spherically Expanding Premixed Cool Flames under Gravitational Conditions (34) Y. Wang, X. Guan, S. Xie, M. Zhou, Z. Zhang, Z. Chen, T. Zhang
16:50	Experimental Investigation on Rotating Detonation Combustion Fueled by Kerosene (55) H. Wen, B. Wang	1D Simulation of Direct Carbon Dioxide Conversion to Methane over NiO/SiO2 Catalyst Using Detailed Surface Chemistry (237) V. Günther, L. Léon, Rakhi, F. Rachow, J. I. Flege, F. Mauss	Effect of Chemical Mechanisms on Deflagration to Detonation Transition and Its Application to Mechanism Reduction (220) H. Li, Z. X. Chen, T. Zhang	Induction Zone Length Measurements for Regular Cell Pattern by Nitric Oxide Planar Laser-Induced Fluorescence (26) M. Alicherif, K. P. Chatelain, S. B. Rojas Chavez, D. Lacoste	Pressure Effects on Laminar Burning Velocity of SNG/air Mixtures in a Closed Vessel (224) S. H. Cho, K. M. Lee
17:15	Simulations of two-phase kerosene/air rotating detonation engine at Ma5 flight conditions (312) F. Wang, Q. Liu, C. Weng	Effect of Initial Conditions on the Inhibition Process of H2-O2/air Detonations Using CF3I, CO2, and H2O (129) A. Dahake, R. K. Singh, A. V. Singh		Detonation Onset Chemiluminescence: An Experimental Analysis to Choose Light Filters (198) C. C. Mejia-Botero, F. Virot, J. Melguizo-Gavilanes	Propagation of Expanding Ellipsoid-Shaped Flame (46) Y. Zhang, Z. Weng, R. Mevel
17:40	Study on the Effect of Two-Phase Fuel on the Detonation-Wave Collision Process in a Rotating Detonation Ramjet Engine (277) X. Huang, Z. Lin	Thermodynamic Model for Reforming and Oxidation of Methane over Nickel Catalyst (316) R. Rakhi, V. Günther, T. Franken, F. Mauss	Analysis of Super Knock and Detonation in A Rapid Compression Machine (31) J. Li, J. Yang	Challenges of the Induction Zone Length Measurements by NO-LIF (81) K. P. Chatelain, S. B. Rojas Chavez, M. Alicherif, D. Lacoste	Experimental Investigation of the Laminar Burning Velocity for n-Dodecane/Air Mixture at Elevated Temperatures (112) A. M. Fulzele, S. Mohapatra, S. Kumar
18:50-20:50	**Young Mixer** (for students, postdocs, and young researchers)				

TUESDAY, JULY 25					
ROOM	CONVENTION HALL A	CONVENTION HALL B	LECTURE ROOM	MEETING ROOM 2	MEETING ROOM 3
9:00	Plenary Lecture: **Nabiha Chaumeix** (CNRS ICARE, France) Role of the Chemical Kinetics on the Assessment of Explosions and Their Mitigation Convention Hall B, Chair: M. Fikri				
10:00	Coffee break				
Set T1	RDE Mode Analysis Chairs: J. Y. Choi, A. Sow	Flames in Porous Media Chairs: Z. Chen, I. Kirillov	Detonation Structure 2 Chairs: C. Chiquete, K. Hayashi	Novel Reacting Models Chairs: Y. Morii, C. Huete	Flames with Particulates 1 Chairs: O. Mathieu, P. Utkin
10:30	Data-Driven Multi-mode Recognition and Reconstruction of the Rotating Detonation Chamber (191) X. Wang, H. Wen, B. Wang	Experimental Iinvestigation on Flame Propagation Characteristics in Kelvin-Type Ordered Porous Media (153) X. Chen, J. Li, X. He, N. Wang	Probing Nitrogen Vibrational Relaxation in Hydrogen-Oxygen-Nitrogen Detonations Using Ozone (267) X. Shi, H. Wang	An OpenFOAM Solver for Shock and Detonation Simulation in Real Gas (48) Z. Weng, R. Mevel	Modelling turbulence interaction and the preferential concentration of reacting iron particles (255) S. S. Hemamalini, S. Guhathakurta, B. Cuenot, J. van Oijen, X. Mi
10:55	Relationship Between Fuel Concentration Distribution in the Combustion Chamber of a Rotating Detonation Engine and its Operating Mode (180) N. D. Duong, K. Kawasaki, S. Shibagaki, K. Ishii	Effects of Porous Structures at Pipe Outlet on Self-ignition of High-Pressure Hydrogen Leakage (163) H. J. Lee, M. S. Yun	Analysis of Chemical Structure of a Weakly Unstable Cellular Gaseous Detonation (183) H. Watanabe, A. Matsuo, A. Chinnayya, N. Itouyama, K. Matsuoka, J. Kasahara	Experimental and Numerical Comparison of Weakly Unstable Detonation using Planar Laser-Induced Fluorescence of Nitric Oxide Imaging (93) V. Sankar, K. P. Chatelain, J. Melguizo-Gavilanes, S. B. Rojas Chavez, M. Alicherif, D. Lacoste	Exploring Laminar Iron-Flame Propagation Limits in Long, Narrow Channels (217) S. Guhathakurta, J. van Oijen, D. Martinez
11:20	On the Presence of Inhomogeneous Co-Rotating Detonation Waves in a Rotating Detonation Combustor (233) A. D. Feleo, M. Gamba	Influence of Copper Foam on the Flame Front Dynamics of a Hydrogen-Air Mixture in an Open Channel (239) S. Golovastov, G. Y. Bivol, V. Golub, F. Kuleshov	Towards Predictive Simplified Kinetics for Detonation Simulations (122) F. Veiga-Lopez, S. Taileb, A. Chinnayya, J. Melguizo-Gavilanes	Pareto-Optimal Assignment of Thermodyamic State Equations for LES of Transcritical Reacting Flows (248) P. Sharma, D. Brouzet, M. Ihme	Simulation of Radiative Laminar Coal Dust Flames (229) J. A. Aguilar, R. Houim
11:45	Relative Role of Stratification and Mixing on the Stability of Linear Detonation Combustors (13) M. J. Ullman, S. Prakash, V. Raman		Detonation Thermodynamic State Statistics: 2D and 3D Simulations in Hydrogen-Oxygen (244) J. Crane, J. Lipkowicz, X. Shi, I. Wlokas, A. Kempf, H. Wang	Simulation of Counterflow Nonpremixed Flame with Electric Fields (117) J. W. Son, J. Park, M. S. Cha	Theoretical Modeling of Iron-droplet Combustion Informed by Molecular Dynamics Simulations (258) L. C. Thijs, E. Kritikos, A. Giusti, W. J. S. Ramaekers, J. A. van Oijen, L. P. H. de Goey, X. C. Mi

TUESDAY, JULY 25					
ROOM	CONVENTION HALL A	CONVENTION HALL B	LECTURE ROOM	MEETING ROOM 2	MEETING ROOM 3
12:10	Lunch				
Set T2	**RDE Heat Analysis and Management** Chairs: M. Gamba, J. Kasahara	**Numerical Turbulent Flows** Chairs: K. Maruta, V. Raman	**Detonation Cellular Dynamics 2** Chairs: C. Chiquete, V. Monnier	**Flame Theory** Chairs: C. Huete, F. Marra	**Flames with Particulates 2** Chairs: D. Fernández-Galisteo, J. J. Yoh
13:50	**Effects of Air Film Cooling on Rotating Detonation Engine (10)** K. Y. Cho, S. Chriss, J. Hoke, A. Holley, S. Schumaker	**Development of a Multiphase Turbulent Flow Solver for Rocket Injector Atomization Simulation (111)** H. W. Kim, D. H. Shin	**Detonation Cell Size Measurement and Prediction for Hydrogen- and Hydrocarbon-Nitrous Oxide Mixtures (226)** G. Bakalis, B. Zhang, H. D. Ng	**A Mode Identification Index for Multi-Regime Combustion (80)** L. Angelilli, F. Hernandez-Perez, H. G. Im.	**Multiphase Homogeneous Mixture Model On Metal Combustion With Eulerian To Lagrangian Transformation (149)** J. S. Kang, H. G. Sung
14:15	**Development of an Unsteady Conjugate Heat Transfer Solver for Rotating Detonation Engines (116)** Y. Hou, J. Z. Ma, Z. Sheng, J. Wang	**Turbulent/Non-turbulent Interface and Flow Topogloy in a Temporally Evolving Mixing Layer (35)** D. Huang, W. Han, Q. Fu, J. Li, L. Yang	**Numerical Investigation of the Critical Tube Diameter Problem with Modulated Cellular Detonation Fronts (240)** G. Bakalis, C. Yan, K. C. Tang-Yuk, X. Mi, H. D. Ng	**Application of FGM Method Considering Preferential Diffusion and Flame Stretch to a Cylindrical Propagating Hydrogen Flame (64)** K, Kinuta, R. Kai, R. Kurose	**Temperature Measurement During the Combustion of a Single Aluminium Particle (232)** V. Glasziou, G. Legros, C. Chauveau, S. Courtiaud, F. Halter
14:40	**Adaptive Three-Dimensional Simulations of Rotating Detonation with Cooling Walls (190)** H. Peng, R. Deiterding	**Development of a Real-Fluid Based OpenFOAM Solver for Transcritical and Supercritical Flows (139)** D. N. Nguyen, C. S. Yoo, J. H. Lee	**The Hydrodynamic Origin of the Detonation Cell (270)** P. A. Meagher, X. Shi, A. Jayaraman, N. Kateris, X. Zhao, H. Wang	**A Lean Unified Non-Empiric Model for Fundamental Concentration Limits of Spherical Flame Balls and Plane Deflagration Flames in the Hydrogen-Containing Mixtures (225)** V. Y. Plaksin, I. A. Kirillov	**A Model for Aluminum-Dust Flames Based on Particle Burning Time (104)** A. Gosset, J. Suarez, S. Courtiaud, L. Selle
15:05	**Average Heat Flux Characteristics of a Compact Rotating Detonation Engine for Space Propulsion (219)** J. Z. Ma, Y. Hou, Y. Wang, X. Zhang, X. He, J. Wang	**On the Ignition Characteristics of NH3/Air and NH3/H2/Air Mixing Layers in Turbulent Flows (144)** S. Y. Oh, C. S. Yoo	**An Experimental Investigation of the Initial Temperature Dependence of a Characteristic Length Scale Associated with Detonation Diffraction (328)** A. Kawasaki, Y. Kikuchi, H. Sun, N. Itouyama, K. Matsuoka, J. Kasahara, A. Matsuo	**A Direct Numerical Simulation based comparison between conventional and MILD combustion processes of turbulent stratified mixtures (29)** H. S. A. M. Awad, K. Abo-Amsha, U. Ahmed, N. Chakraborty	**Development of a Numerical Framework for Modeling Fully Resolved Combustion Processes of Multiple Iron Particles (171)** M. Ezra, O. Peles, Y. Kozak
15:30	Main-Track Poster Session and Coffee (Main Hall)				

TUESDAY, JULY 25					
ROOM	CONVENTION HALL A	CONVENTION HALL B	LECTURE ROOM	MEETING ROOM 2	MEETING ROOM 3
Set T3	**Diagnostic Methods** Chairs: J. Herzler, J. I. Ryu	**Battery Kinetics 1** Chairs: S. Dorofeev, C. Fouchier	**Ignition** Chairs: D. Martinez-Ruiz, M. H. Wu	**Hele-Shaw Flame Dynamics** Chairs: F. Rodriguez, H. D. Ng	**Turbulent Flame Structure** Chairs: A. Sanchez, C. S. Yoo
16:45	**Prediction of the Derived Cetane Number of Hydrocarbon Fuels Using Extended-Wavelength FTIR Spectra and Support Vector Regression (131)** V. Boddapati, A. Ferris, R. Hanson	**Shock-Tube CO Measurements during the Combustion of Ethylene Carbonate, a Battery Electrolyte Component (36)** C. M. Gregoire, E. L. Petersen, O. Mathieu, K. Kanayama, H. Nakamura, K. Maruta	**Effects of Repetitive Spark Discharges with Milliseconds Intervals on the Ignition-to-Flame Propagation Transition for Lean n-Heptane/Air and iso-Octane/ Air Mixtures (69)** T. Kakizawa, Y. Hirano, T. Mukoyama, T. Tezuka, Y. Morii, H. Nakamura, K. Maruta	**Topology of 2dim Expanding Slow Hydrogen-Air Flames in Cylindrical Horizontal Hele-Shaw Cell (227)** A. Filippov, V. Denisenko, I. Nikolaev, V. Gubernov, V. Y. Plaksin, P. V. Moskalev, I. A. Kirillov	**Evolution of Displacement Speed Statistics during Flame-Wall Interaction within Turbulent Boundary Layers (44)** G. Ozel Erol, U. Ahmed, N. Chakraborty
17:10	**External Standard Calibration Method for High-Repetition-Rate Shock Tube Kinetic Studies with Synchrotron-Based Time-of-Flight Mass Spectrometry (205)** F. E. Cano Ardila, S. Nagaraju, R. S. Tranter, S. Abid, A. Desclaux, A. R. Ccaya, N. Chaumeix, A. Comandini	**Thermal runaway modeliling of high-nickel NCA-SCN lithium-ion battery based on kinetic analysis (168)** U. P. Padhi, A. Mehrotra, Y. J. Lee, J. J. Yoh	**Thermal Ignition by Millimeter-Scale Surface Hot Spots (170)** D. T. Schoeffler, J. Shepherd	**Numerical Study of the Propagation Patterns of Lean Hydrogen-Air Flames Under Confinement (71)** A. Dejoan, D. Fernandez-Galisteo, V. N. Kurdyumov	**A Comparative Study of the Effect of Cavity and Obstacle on Propagation Behavior of Premixed Methane-Air Flame (204)** D. Wu, T. Ma, J. Li
17:35	**266 nm Laser-Induced Fluorescence Reference Spectra of Ketones and Aromatic Compounds (235)** J. Brunzendorf, J. Höltkemeier-Horstmann, D. Markus	**Toward Model Prediction for Combustion Properties of Lithium-Ion Battery Electrolyte Solvents (187)** K. Kanayama, H. Nakamura, T. Tezuka, K. Maruta	**Experimental Study on Laser-Induced Spark Ignition of Some Flammable Premixtures (287)** T. Imamura, N. Morizumi, Y. Miyazaki	**Dynamics of 2D Expanding Slow Hydrogen-Air Flames in Cylindrical Horizontal Hele-Shaw Cell (221)** P. V. Moskalev, A. Filippov, V. Denisenko, I. Nikolaev, V. Gubernov, V. Y. Plaksin, I. A. Kirillov	**Modeling of Non-Premixed Turbulent Flame Dynamics Using an Open-Source CFD code (84)** S. Kim, J. I. Ryu

POSTER SESSION I	
TUESDAY, 15:30-16:45	
P-1	Characterization of Volatile Fire Effluent from Thermoplastic Polyurethane Under Variable Oxygen Concentration Using TG-FTIR (307) R. Zong, Y. Lin, C. Liu
P-2	Hot Gas Ball Curvature Effect on Expansion Rate (58) T. Tsuruda
P-3	Radiative Heat Losses from Spherical Flames of Hydrogen and Methane Mixtures (326) A. Hamadi, A. Roque, K. Coudoro, N. Chaumeix
P-4	Laminar Flame Properties from Spherically Propagating Premixed Flames (318) A. Hamadi, A. Roque, K. Coudoro, N. Chaumeix
P-5	Explosion Limit of Hydrogen/Oxygen Mixture with Water Vapor Addition (43) Z. Wang, X. Gou, H. Zhang
P-6	Hybrid Mixture Explosions Testing in the 1 qm Vessel (45) D. Gabel , R. Dworschak, L. Köppenbender, J. Kleinert
P-7	Modeling the Electrical Ignition of Energetic Material via Joule Heating and Chemical Reaction (159) K. S. Park, M. S. Kim, J. J. Yoh
P-8	Reliability Verification Method of Aged-Electric Initiator using Closed Bomb Test (288) D. S. Kim, S. G. Jang
P-9	Operating Behavior of Initiators Based on the Exploding Foil and Bridge-Wire (282) D. H. Han, S. G. Jang
P-10	The Turbulent/Non-Turbulent Interface and Entrainment in a Hypersonic Boundary Layer (30) F. Meng, W. Han, Y. Lijun
P-11	Gaseous-Liquid Detonation Controllable Synthesis of Polycrystalline Nanostructure TiO2 and TiO2 Carbon Composites (275) N. Luo, Y. Cao
P-12	Experimental Investigation of Detonation Limits in Smooth and Rough-Walled Tubes using Various Gaseous Mixtures (284) T. Ren, C. Shang, J. Lee, Q. Zhang
P-13	Experimental Research on Water-Cooled Rotating Detonation Engine (115) K. Sato, T. Fukuda, S. Yamazaki, T. Nagao, M. Itoh, Y. Iwaki, R. Ikeda, T. Bagnol, E. Dzieminska
P-14	Regenerative Cooling in Rotating Detonation Rocket Engine Supplied with Liquid Propellants (241) M. Kawalec, M. Augustyn, W. Perkowski, A. Bilar, P. Wolanski
P-15	Numerical Simulation of Film-cooled Vitiated Air Heater for Direct-connect Scramjet Experiment (294) B. K. Sung, E. S. Lee, J. H. Lee, S. M. Jeong, J. Y. Choi
P-16	An Application of Lagrangian Equations Coupled with Detailed Chemical Kinetics to the Simple Prediction of Transient Reaction Front Propagation (208) J. I. Ryu

WEDNESDAY, JULY 26					
ROOM	CONVENTION HALL A	CONVENTION HALL B	LECTURE ROOM	MEETING ROOM 2	MEETING ROOM 3
Set W1	**RDE Wave Stability** Chairs: J. Y. Choi, M. Kawalec	**Flame Structure 1** Chairs: F. Marra, N. Chaumeix	**Detonation Diffraction** Chairs: M. Short, M. H. Wu	**Simplified Detonation Models** Chairs: X. Shi, S. Voelkel	**Flame Instabilities 1** Chairs: K. Maruta, C. H. Sohn
9:00	**An Attempt for Establishing Continuous Detonation in a Linearized Combustor by Directly Injecting Liquid Jet A1 (11)** X. Huang, P. H. Chang, Z. W. Teo, Jiun-Ming Li, Chiang Juay Teo, B. C. Khoo	**Emission Spectra from Oxygenated Ammonia Spherical Laminar Flames (128)** Y. Almarzooq, M. Hay, M. Turner, W. Kulatilaka, E. Petersen	**Acetylene-air Flame Acceleration in Rough Channels (238)** G. Y. Bivol, S. Golovastov, V. Golub	**An Approach to Modulate the Frontal Detonation Structures in Numerical Simulations (89)** K. C. Tang-Yuk, G. Bakalis, J. H. Lee, H. D. Ng, X. Mi	**Self-Acceleration of Propagating Cylindrical Hydrogen/air Flames at Normal and Cryogenic Temperatures (38)** L. Yang, Y. Wang, Z. Chen
9:25	**Effect of Injector Expansion Angle on a Rotating Detonation Engine Performance (196)** K. Nakajima, K. Matsuoka, N. Itouyama, J. Kasahara, A. Kawasaki, A. Matsuo	**Lewis Number Effect on Explosive Transition of Stretch-Free Flat Flame (172)** Y. Morii, A. Tsunoda, K. Maruta	**Three-dimensional dynamics of detonation diffraction: effects of the tube cross-section shape (59)** V. Monnier, V. Rodriguez, P. Vidal, R. Zitoun	**Stability Analysis of ZND Detonation for Majda's Model with More General Ignition Function (113)** Y. Sun, Y. Chen	**Effect of Linearly Increased Equivalence Ratio on Combustion Instability of Lean-Premixed Low-Swirl Hydrogen Jet Flame (105)** M. Kawai, J. Nagao, A. L. Pillai, R. Kurose
9:50	**Detonation propagation characteristics according to the fuel injector shape of rotating detonation engine (298)** I. H. Koo, H. S. Han, E. S. Lee, J. Y. Choi	**Soret Diffusion Effects on the Exergy Losses in Hydrogen-Air Laminar Premixed Flames (253)** F. S. Marra, L. Acampora	**Ray-tracked Dynamics of Detonation Wave Fronts during Critical Diffraction (297)** Q. Xiao, R. Mevel, S. Gallier, M. Radulescu	**Eulerian and Lagrangian Statistics in Weakly Two-dimensional Detonations (269)** A. Sow, S. Lau-Chapdelaine	**Experimental and Numerical Study of Forced Response of Small-Scale Lean-Premixed Pure Hydrogen Flames (151)** H. B. Kang, K. T. Kim
10:15		**The Deformation of Wrinkled H2-Air Flames from the Head on Interaction with Expansion Waves (271)** H. Yang, K. Cheevers, A. Pekalski, M. Radulescu	**Experimental Study on Detonation Propagation in Annular Channels (103)** J. Li, S. J. He	**The Effect of a Modulated Cellular Detonation Structure on the Wave Transmission across an Inert Layer (90)** K. C. Tang-Yuk, J. Lee, G. Bakalis, H. D. Ng, X. Mi	**Influences of Fuel Supply-Driven Instability on Flame Transfer Functions and Combustion Instability (162)** J. H. Nam, J. J. Yoh
10:40	Coffee break				
10:40-13:00	WIP Posters and Coffee (Main Hall)				

WEDNESDAY, JULY 26					
ROOM	CONVENTION HALL A	CONVENTION HALL B	LECTURE ROOM	MEETING ROOM 2	MEETING ROOM 3
Set W2	**RDE Modeling** Chairs: R. Deiterding, K. Matsuoka	**Chemical Reaction Kinetics 3** Chairs: R. Hanson, E. Petersen	**Detonation Cellular Dynamics 3** Chairs: L. Bauwens, G. Ciccarelli	**Analysis of Explosions and Mitigation Strategies 1** Chairs: R. Bauwens, J. Thomas	**Condensed-Phase Detonation and Burning** Chairs: A. Chinnayya, J. Melguizo-Gavilanes
11:10	**Lagrangian Particle Tracking Analysis of NOx Emissions in Rotating Detonation Engines (54)** C. V. Beck, V. Raman	**Toluene pyrolysis using high-repetition-rate shock tube coupled to synchrotron-based double imaging photoelectron/photoion coincidence spectroscopy (317)** F. E. Cano Ardila, S. Nagaraju, R. S. Tranter, A. W. Jasper, S. Abid, A. Desclaux, A. Roque Ccacya, L. Nahon, G. A. Garcia, N. Chaumeix, A. Comandini	**Two-Dimensional Detailed Numerical Simulation on Ammonia/Hydrogen/Air Detonation: Stability of Cellular Structure (176)** S. Kohama, N. Tsuboi, K. Ozawa, A. K. Hayashi	**Modeling of Explosively Driven Dispersion: Application to the Fukushima Daiichi Accident (249)** C. Fouchier, J. Shepherd	**Validation of a High Explosive Detonation Product Equation of State via a Slab Geometry Test (70)** E. K. Anderson, S. Voelkel, M. Short, C. Chiquete, S. I. Jackson
11:35	**Examining Structural Inhomogeneities of Detonations in a Rotating Detonation Rocket Engine (160)** M. Bonanni, D. Brouzet, G. Vignat, M. Ihme	**Effect of Oxygenated Species on Pyrolysis and Fuel-Rich Oxidation of CH4 in the Context of Polygeneration: Soot Optical Density, CO-Concentration, and Temperature (184)** D. Nativel, J. Herzler, M. Fikri, C. Schulz	**Detailed Numerical Simulation on Dimethyl Ether/Oxygen Premixture Detonation Using Reduced Chemical Reaction Model: Disturbance of Cellular Structure (193)** D. Kubota, N. Tsuboi, K. Ozawa, A. K. Hayashi	**Flow Conditions during Formation of Hybrid Mixtures in the 20L-sphere (213)** V. Heilmann, S. Zakel, U. Krause	**Shock Initiation Experiments and Reactive Flow Modeling Analysis for Pentaerythritol Tetranitrate (PETN) High Explosive (138)** C. Chiquete, M. J. Burns, E. K. Anderson, S. I. Jackson
12:00	**Effects of Non-Idealities on Gain in a Detonation Cycle (236)** R. Huff, M. Gamba	**Detailed kinetics of Soot Formation from Aromatic Fuels Pyrolysis (319)** T. Viola, L. Carneiro Piton, A. Nobili, M. Idir, S. Abid, N. Chaumeix, A. Comandini	**Evidence for Self-Organized Criticality (SOC) in the Non-Linear Dynamics of Detonations (266)** M. Radulescu, A. Sow	**Numerical Study of Shock Waves Attenuation by a Polydispersed Water Spray (207)** C. Siddappa, O. Thomine, A. Hadjadj, M. S. Shadloo, G. Gai	**Modeling of Impact-Driven Shock-to-Detonation Transition in Porous PBX 9502 (278)** J. Garno, M. Short, S. Voelkel, C. Chiquete

WEDNESDAY, JULY 26					
ROOM	CONVENTION HALL A	CONVENTION HALL B	LECTURE ROOM	MEETING ROOM 2	MEETING ROOM 3
12:25	Numerical Investigation of Three-dimensional (3D) Rotating Detonation Engine with Premixed Hydrogen/Air (174) M. N. Nejaamtheen, J. Y. Choi	Isothermal Decomposition and Kinetic Analysis of Petroleum Pitch in an Inert Atmosphere using the Model-Free Method (148) K. Sahoo, S. Kumar, N. A. Kumbhakarna	Propagation of Hydrogen-Oxygen Cellular Detonation with Ozone Sensitivity in Open Space (49) H. Zhang, Q. Zhang, G. Gu, F. Wan, W. Han		Auto-ignition Behaviors of the GAP/CL-20 Propellant under Thermal Stimulation (15) T. Yu, M. Yang, M. Fang, C. Tang
12:50	Lunch				
13:30	Excursion with dinner				

WIP POSTER SESSION	
WEDNESDAY, 10:40-13:00	
WIP-1	A Numerical Study on the New Slit Flame Combustor Design to Control Hydrogen Flame Shape (6) Y. B. Kim, E. J. Shin
WIP-2	Reaction Kinetics Modeling on Hydrogen Co-firing in Natural Gas Horizontal Firetube Boilers for Steelmaking Industry Applications (17) K. K. Jeong, J. D. Lee, M. Vachon, R. McCann
WIP-3	Investigation of the Thermal Ignition Phenomena of Liquid Fuel in a Hot Atmosphere (141) C. Fouchier, D. Laboureur, J. E. Shepherd
WIP-4	Numerical and Experimental Investigation of Lean Turbulent Premixed Flames in a Rectangular Duct-Type Combustor (175) B. C. Choi
WIP-5	Dynamic Pressure-Based Combustion States Clustering Using Variational Auto-Encoder Method (322) S. K. Choi, D. S. Kim
WIP-6	Numerical Study of CH4/H2 Co-Combustion in an Industrial Pilot Scale Heating Furnace (331) Z. Y. Pan, T. H. Lin, M. H. Wu, F. H. Wu, C. B. Chen
WIP-7	Flame Visualization of GOX/GCH4 pintle model combustor (332) D. H. Kim, H. T. Jo, S. B. Heo, J. H. Choi, Y. B. Yoon
WIP-8	Experimental Study of Flashback Characteristics in a Partially Premixed Hydrogen Combustor (333) J. H. Choi, D. H. Kim, Y. B. Yoon
WIP-9	High-Temperature Line Strengths with He- and Ar-Broadening Coefficients of the P(20) line in the 1 ←0 band of Carbon Monoxide (335) C. M. Gregoire, O. Mathieu, E. L. Petersen
WIP-10	Battery Cell Thermal Runaway in an Enclosed Volume: Preliminary 3D Simulations of an Experiment (336) S. Chakaroun, P. Coste, S. de Persis, A. Bengaouer, S. Fiette, J. Cognard, N. Chaumeix
WIP-11	Development of Comprehensive Chemical Kinetic Mechanism for Ammonia/Methanol Mixture (337) S. Nadiri, B. Shu, R. Fernandes
WIP-12	Partial Flame Analysis for Dynamic Characteristics of GCH4-GO2 Jet-swirl Coaxial Injector under Acoustic Perturbation (338) H. T. Jo, D. H. Kim, Y. B. Yoon
WIP-13	Development of Swirl-flow Non-Premixed Mesoscale Combustor (339) P. Kumar, S. Solagar, B. Aravind, S. Kumar
WIP-14	Relationship Between Transient Characteristics of Burning Velocity Just After Ignition and Quenching Distance (340) J. Suematsu, T. Imamura
WIP-15	Numerical Stdudy of MMH/NTO Hypergolic Ignition in Co-flowing Plane Jets (341) H. H. Jeong, J. R. Shin, J. W. Chae, B. J. Lee
WIP-16	Multiscale Modeling on Shock-Cool Flame Interaction with DME/Air Mixture (342) E. Fan, T. Zhang
WIP-17	The Effect of Low Temperature Chemistry on Detonation Propagation in Dimethyl Ether Mixture (343) X. Liu
WIP-18	Assessing NOx Emission from Hydrogen-Enriched Natural Gas in Oxygen-Enriched Conditions (344) M. W. Dai, Y. J. Li, C. W. Huang, Y. H. Li, J. Lasek

WIP POSTER SESSION	
WEDNESDAY, 10:40-13:00	
WIP-19	H2 and H2/CO Flames Speed Correlations in Isotropic Turbulence (345) B. Yves, D. Anthony, B. Maxime, G. Jules, A. Comandini, N. Chaumeix
WIP-20	TG-FTIR Characterization of Volatile Thermoplastic Polyurethane Fire Effluent Under Varying Oxygen Concentration (346) R. Zong, Y. Lin, C. Liu
WIP-21	Autoignition Characteristics of Coke Oven Gas in Hot Air Coflow (347) H. T. Lin, D. H. Wu, G. B. Chen
WIP-22	Effects of Hydrogen Addition on the Preheating Zone and Soot Generation of Ethylene/Air/Nitrogen Inversed Diffusion Flames (348) P. H. Lin, Y. H. Li
WIP-23	Silicon Dust Explosions: An Experimental Study of Flame Propagation in Dust Extraction Systems (350) A. Faye, A. Bjørnsen, M. van Wingerden, T. Buseth, G. Pedersen, T. Skjold
WIP-24	Modified Three-Step Chemical Model for the Critical Height for Detonation Propagation (351) H. Watanabe, S. Taileb, J. Melguizo-Gavilanes, A. Chinnayya
WIP-25	Multiphase Bunsen Burner Set-Up for Investigating Solid Chemical Inhibitors in Hydrogen-Air Explosions (356) M. van Wingerden, T. Skjold
WIP-26	Effect of Hydrogen Addition in Flameless Combustion with Kerosene (358) M. Sood, M. K. Ansari, S. Solagar, S. Kumar
WIP-27	Emission Spectra from NH3/H2-Air and NH3/H2/N2-Air Spherical Laminar Flames (359) Y. Almarzooq, M. Hay, M. Turner, W. Kulatilaka, E. Petersen
WIP-28	Experimental Observations of Shock-Flame Interactions: New Facility at CNRS-ICARE (360) A. Roque, S. Abid, M. Idir, A. Comandini, N. Chaumeix
WIP-29	Influence of Aluminum Particle Size of Reaction Propagation of Al/CuO Nanothermite Layers on Copper Meshes (361) W. L. Hsu, S. H. Su, M. H. Wu
WIP-30	Linear Burn Rates of HAN-Based Propellants Gelled Using Hydrophilic Fumed Silica (362) Y. J. Chen, I. Y. Tsai, Y. Z. Song, M. H. Wu
WIP-31	Influence of Ozone on Flame Acceleration and Deflagration-to-Detonation Transition in Narrow Channels (363) B. Chang, M. H. Wu, H. W. Ssu
WIP-32	Influences of Electrolysis Duration and Voltage Magnitude on Decomposition of HAN Aqueous Solutions (364) Y. T. Chou, G. J. Yang, M. H. Wu
WIP-33	Numerical Simulation of Deflagration Initiation in Flows of Hydrogen-Air Mixes (366) S. Martyushov
WIP-34	Lithium-Ion Battery Failure Experiments and Hazard Analysis (367) C. Landry, P. Adefiranye, C. Nguyen, S. McCaulley, B. Japhet, J. C. Thomas
WIP-35	Explosive Transition of Deflagration in PRF/air Mixtures (368) D. Nakao, Y. Morii, T. Tezuka, K. Maruta

THURSDAY, JULY 27					
ROOM	CONVENTION HALL A	CONVENTION HALL B	LECTURE ROOM	MEETING ROOM 2	MEETING ROOM 3
9:00	Plenary Lecture: **Kaoru Maruta** (Tohoku University, Japan) Combustion Fundamentals for Future Hyper Lean Burn Spark Ignition Engine Applications: Effects of Fuel Properties on Lean Ignition Limits and Knock Onset Convention Hall, Chair: J. Y. Choi				
10:00	Coffee break				
Set R1	Ramjet and Scramjet Combustors 1 Chairs: R. Deiterding, S. Voelkel	Kinetic Analysis Chairs: Z. Chen, J. I. Ryu	DDT 2 Chairs: E. Dzieminska, V. Rodriguez	Analysis of Explosions and Mitigation Strategies 2 Chairs: C. Fouchier, T. Skjold	Ammonia Flames 1 Chairs: O. Mathieu, H. Nakamura
10:30	Hydrogen Combustion Characteristics in Cavity-based Supersonic Combustor (156) G. W. Yim, H. J. Lee	Styrene Thermal Decomposition under Shock Tube Pyrolysis Conditions: An Experimental and Kinetic Modeling Study (315) A. Hamadi, F. E. Cano Ardila, S. Abid, N. Chaumeix, A. Comandini	A Study of The Deflagration-To-Detonation Transition and Its Limits of Hydrogen-Air Mixtures in An Open-Ended, Obstructed Channel (194) M. Herniksen, A. Pykhtina, A. V. Gaathaug, K. Vaagsaether, D. Bjerketvedt	Examination of Large-Scale Dust Explosion Reactivity by Decoupling Dust Injection and Turbulence Generation (82) C. R. L. Bauwens, L. R. Boeck, S. Dorofeev	Laminar Flame Speed and Minimum Spark-Ignition Energy Measurements of Ammonia in Argon (246) M. Figueroa-Labastida, L. Zheng, A. Ferris, R. Hanson
10:55	Effect of Inlet Conditions in Hydrogen-Air Supersonic Reactive Mixing Layers (206) C. Huete, P. J. Martinez-Ferrer, D. Martinnez-Ruiz, D. Mira	The Reduced-Kinetic Description of Hydrogen-Air Gas-Turbine Combustion (4) B. Li, J. Carpio, D. Fernandez-Galisteo, A. L. Sanchez, F. Williams	Admixture of Hydrogen to Pipelines - Experimental work on DDT without obstacles (108) A. Lucassen, E. Tampieri, S. Spitzer, E. Salzano	Propagation and Severity of Coal-Dust Explosions and the Effect of Radiation in Different Channel Lengths (201) S. Guhathakurta, R. Houim	End-Gas Auto-Ignition of Ammonia-Air Mixture with Spark Ignition in a Rapid Compression Machine (300) Z. Ridong, W. Liu, Q. Zhang, Z. Wang
11:20	Controlling Combustor Mode Transition in Dual-Mode Scramjet (251) M. Kanapathipillai, K. Yu	Reaction Kinetics of Magnesium Subjected to Hygrothermal Aging at Oxygen-Rich Conditions (186) Y. J. Lee, J. Y. Oh, J. J. Yoh	Numerical Simulation on DDT in Real and Large Scale Combustion Chamber Using a Combustion Velocity Method and Ignition Model with a Detailed Chemical Reaction System (127) I. Nakamori, T. Tomizuka, A. Takahashi, F. Onishi, M. Kuzunetsov, T. Kodama, Y. Tamauchi, N. Sato, A. K. Hayashi, N. Tsuboi	Dynamics of Hybrid-Mixture Explosions at Large Scales (12) L. R. Boeck, C. R. L. Bauwens, S. Dorofeev	Studies on the Combustion Characteristics of Ammonia in a Swirl Combustor (63) J. H. Song, J. H. Kim, O. C. Kwon

THURSDAY, JULY 27					
ROOM	CONVENTION HALL A	CONVENTION HALL B	LECTURE ROOM	MEETING ROOM 2	MEETING ROOM 3
11:45	3D Numerical Simulation for the Combustion Characteristics Analysis of the Dual Combustion Ramjet Engine (293) M. S. Jo, B. K. Sung, S. M. Jeong, J. Y. Choi	Thermal Analysis of the Decomposition of a LOVA Gun Propellant Based on RDX and Nitrocellulose (230) S. Delbarre, L. Courty, M. William-Louis	A One-Dimensional Model for Accelerating Deflagrations and their Transition to Detonations (73) W. Rakotoarison, H. Yang, M. Radulescu	Modelling the Effect of Phase Transition on the Blast Wave in BLEVEs (132) K. Vaagsaether, O. K. M. Ibrahim, P. M. Hansen, D. Bjerketvedt	Laminar Burning Velocity Measurement of Ammonia Fuel Blends at Elevated Temperature and Pressures (101) P. Berwal, S. Kumar
12:10	Lunch				
Set R2	Detonations with Losses Chairs: A. Chinnayya, S. I. Jackson	Battery Kinetics 2 Chairs: C. Gregoire, M. Fikri	Propellant Combustion Chairs: E. Anderson, J. Garno	Detonation Initiation Concepts Chairs: A. Matsuo, R. Mevel	Ballistics Chairs: N. Itouyama, K. Matsuoka
13:50	Near-limit Detonation in Long Spiral Tube: Improved Design and Methodology (50) Z. Huang, Z. Ni, Z. Li, Z. Weng, R. Mevel	Venting and Gas Generation from 18650 Lithium-Ion Batteries with LFP Cathode Chemistry During Thermal Runaway (136) C. A. Almodovar, L. R. Boeck, C. R. L. Bauwens	Laser Ignition of HTPB Fuel in Oxidizing Conditions (52) F. A. Rodriguez, C. Landry, J. C. Thomas, E. Petersen	Effect of NTC Behavior on the Characteristic Length Scale of Direct Detonation Initiation (110) M. B. Luong, H. G. Im	Visualization of Detonation Initiation by a Spherical Projectile Launched into The Soap Bubble Filled with a Combustible Mixture (177) S. Maeda, N. Hanyu, Y. Hiraoka, R. Sato, K. Nomura, T. Obara
14:15	Soot-Foil Recordings of Cellular Detonation Propagating in Annular Tubes (119) V. Rodriguez, A. Chinnayya	The Significant Hazards of Thermal Runaway of Ultra-high-nickel Lithium-ion Batteries during Charging (158) J. Y. Oh, A. Mehrotra, Y. J. Lee, J. J. Yoh	Peculiar Burning Characteristics of Electrically Controlled Solid Propellants (166) R. Rajak, D. H. Lim, G. Kanagaraj, J. Y. Oh, J. J. Yoh	Effects of Ozone Addition on Direct Initiation of Detonation in Hydrogen/Oxygen Mixtures (325) H. Li, W. Liang, C. K. Law	Ballistic Experiments on Shock-Induced Combustion in Square Channel (228) M. V. Doroshko, U. M. Hryshchanka, V. V. Leschevich, O. G. Penyazkov, V. A. Vasetskiy
14:40	Numerical Simulation of Flame Quenching and Acceleration by a Metal Foam (234) H. C. Li, R. Houim	Experimental Investigation on Diethyl Carbonate Combustion (285) S. P. Cooper, C. M. Gregoire, Y. Almarzooq, E. Petersen, O. Mathieu	Experimental Study of AP-HTPB Solid Propellant Combustion under Periodic Strain Conditions (292) M. Gu, J. Ouyang, S. Wang, X. Shi, K. Hou, Z. Zhou, F. Qi		Imaging Pyrometry and Shock Wave Tracking During Ballistic Impact of Metal Projectiles (243) D. Idrici, J. Loiseau, Z. Laing, D. Frost, S. Goroshin
15:05	Main-Track Poster Session and Coffee (Main Hall)				

THURSDAY, JULY 27					
ROOM	CONVENTION HALL A	CONVENTION HALL B	LECTURE ROOM	MEETING ROOM 2	MEETING ROOM 3
Set R3	**Ramjet and Scramjet Combustors 2** Chairs: I. S. Jeung, Y. Morii	**Kinetic Algorithms** Chairs: J. Garno, C. S. Yoo	**Detonation Initiation via Focusing** Chairs: L. Bauwens, P. Vidal	**Detonation in Nonuniform Conditions** Chairs: R. Mevel, E. Oran	**Ammonia Flames 2** Chairs: N. Itouyama, E. Petersen
16:20	**Numerical Study on Effect of Number of Injectors on Scramjet Combustor (306)** S. M. Jeong, J. E. Kim, B. K. Sung, J. Y. Choi	**A Physics-Constrained Neural Network Model for Combustion Chemical Kinetic Prediction (65)** T. Wang, T. Zhang, Z. Chen	**Numerical and Experimental Analysis of Autoignition Induced by Shock Wave Focusing (37)** Z. Yang, B. Zhang	**The Influence of Non-Equilibrium Translational Effects on Reactive Dynamics during the Shock to Detonation Transition using Molecular Dynamics (274)** R. Murugesan, M. Radulescu	**Numerical Investigation on the Spark Ignition of Laminar Strained Premixed NH3-Air Flames with CH4 and H2 as Co-Fuels (252)** C. Yu, R. A. Schießl, U. Maas, D . Markus, S. Essmann, B. Shu
16:45	**Direct Numerical Simulation of Supersonic Cavity-Based Premixed Flame Stabilization: Effect of Inflow Turbulence (222)** M. Lin, J. Fang, X. Deng, Z. X. Chen	**A Combined CSP-PCA Framework for Accelerated Integration of Stiff Chemistry in Reacting Flow Solvers (311)** R. Malik, R. Malpica Galassi, M. Valorani, H. G. Im	**Experimental Study on the Combination of Laser Ignition and Shock Focusing Method for Detonation Initiation (96)** T. Sato, K. Matsuoka, A. Kawasaki, N. Itouyama, H. Watanabe, J. Kasahara	**The Propagation of Detonation Waves in the Temperature Non-uniform Zone (223)** X. Liu, T. Ma, J. Li	**Numerical Investigation of Soot Reduction by Ammonia Addition in Laminar Counterflow Diffusion Flames with Reactive Inception Model (130)** J. Guo, Q. Wang, P. Liu, E. Quadarella, W. Roberts, S. M. Sarathy, H. G. Im
17:10	**Local Dynamic Combustion Model Adaptation for Large-Eddy Simulation of Scramjets at Reduced Cost (147)** M. Bonanni, A. Norris, M. Ihme	**Coarse-Grained State Analysis of Methane Combustion Mechanism (140)** M. Li, P. Du, S. Liang, L. Acampora, F. S. Marra, L. Ji	**Reflected Shock Wave Bifurcation Detonation Initiation (21)** V. Yousefi-Asli, G. Ciccarelli	**Numerical Simulation of Detonation Wave Propagation in a Non-Uniform Medium in the Shock-Attached Frame (66)** A. Lopato, Y. Poroshyna, P. S. Utkin	**TDLAS Spectrometer for the Quantification of Ammonia under Elevated Temperature and Pressure (167)** D. Zhu, S. Agarwal, L. Seifert, B. Shu, R. Fernandes, Z. Qu
17:35	**Control of Oblique Detonation Wave in an Unsteady Inflow (40)** J. Sun, P. Yang, B. Tian, Z. Chen	**Construction of Compact Reaction Models for Methane and Natural Gas using Genetic Algorithms (215)** K. Hirose, H. Nakamura, K. Shimoyama	**The critical conditions for the formation of the Mach shock from shock reflections (265)** F. Zangene, M. Radulescu	**Deflagration to Detonation Transition in mixtures of Ethanol and Acetone Sprays with Gaseous Oxygen (20)** H. Kadosh, D. Michaels	**Laminar Burning Velocity Measurement of NH3/H2/air Mixtures at Elevated Temperatures (188)** Shawnam, M. Sood, P. Berwal, S. Kumar
19:00	Banquet				

POSTER SESSION II	
THURSDAY, 15:05-16:20	
P-21	Design Considerations for a Premixed Rotating Detonation Combustor (154) K. Matsuoka, D. T. Schoeffler, J. E. Shepherd
P-22	Prediction Methods of Detonation Initiation Using Transient Values and Integral of Reactivity Gradient (216) J. I. Ryu
P-23	Evaporation and Combustion Characteristics of Nano-Aluminum Decane Droplet Under Laser Excitation (42) X. Zhou, J. W. Li, Q. Cao, B. I. Shi, N. F. Wang
P-24	Accidental Hydrogen Explosions: Strength of Knowledge in Risk Assessments (323) T. Skjold
P-25	PARs Governing Parameters and Criteria for Unified Protocol of Performance Rating and Safety Margins Assessment (60) I. A. Kirillov, N. L. Kharitonova
P-26	Effect of a Bio-Jet Fuel on Ignition Delay as an Additive to a Kerosene Aviation Jet Fuel (22) H. S. Han, S. Kang, B. H. Jeong, C. H. Sohn
P-27	NOx and CO emission Characteristics of Two-Stage Model Gas-Turbine Combustor Using CH4/NH3 Blended Fuel (169) J. H. Kim, J. M. Lee, J. Park, C. S. Yoo, S. H. Chung
P-28	Improved Chemical Mechanism of NH3/H2/Air and Adoption of Artificial Neural Network (195) S. R. Kwon, S. K. Im
P-29	A Comparison Between Water Addition and CO2 Addition to a Diffusion Jet Flame (263) B. E. Rodriguez, H. Girodon, Y.-C. Chien
P-30	Effects of Strain Rate on Entropy Generation in Laminar Counterflow Diffusion Flames (305) S. Xue, W. Han, Y. Lijun
P-31	Stability Limits And Transfer Functions Of Partly Dissociated Ammonia Flames (79) N. Shohdy, M. Alicherif, D. Lacoste
P-32	Pre-detection Study of Combustion Instability Using Dual-Nozzle Swirl Combustor and Classifying Criteria (133) D. J. Jang, S. H. Kwak, J. H. Choi, Y. B. Yoon, M. C. Lee
P-33	Forced Ignition of Premixed Cool and Hot DME/Air Flames in a Laminar Counterflow (95) Y. Wang, S. Xie, H. Böttler, X. Chen, A. Scholtissek, C. Hasse, Z. Chen
P-34	A Study on the Combustion Reaction and Control Algorithm Using Methane-Hydrogen Mixture Gas (5) E. J. Shin, Y. B. Kim
P-35	Parametric Instability of Hydrogen-Enriched Combustion in High-pressure Condition (295) H. S. Byun, C. Rubiella, H. R. Do

FRIDAY, JULY 28					
ROOM	CONVENTION HALL A	CONVENTION HALL B	LECTURE ROOM	MEETING ROOM 2	MEETING ROOM 3
Set F1	**RDE Thrust** Chairs: M. Kawalec, V. Rodriguez	**Flame Structure 2** Chairs: K. Chatelain, M. Luong	**Detonation Initiation with Diffraction** Chairs: L. Boeck, A. Matsuo	**Novel Facilities and Methods** Chairs: A. Ferris, J. J. Yoh	**Detonations and Shocks with Particles 2** Chairs: X. Mi, F. Rodriguez
9:00	**Experimental Study on the Performance of Rotating Detonation Engine with Aerospike Nozzle (164)** H. J. Lee, T. S. Roh, H. J. Kim	**Flame Surface Enhancement from the Head on Interaction with an Expansion Wave (272)** K. Cheevers, H. Yang, A. Pekalski, M. Radulescu	**Re-initiation in Diffraction of Detonation Propagating in A Thin Channel (202)** K. Ishii, K. Hamaya	**A Matlab Code for Driver Insert Design (47)** Y. Tan, Z. Li, R. Mevel	**Numerical Analysis of Cellular Detonation Frontal Structure in Liquid n-Dodecane Sprays (51)** Q. Meng, L. Zhang, H. Zhang
9:25	**Characteristics of Torque around Axial Direction on Cylindrical Rotating Detonation Engines (210)** S. Sawada, K. Ishihara, N. Itouyama, H. Watanabe, A. Kawasaki, K. Matsuoka, J. Kasahara, A. Matsuo, I. Funaki	**Counterflow Flame Behavior at Large Lewis Number around Explosive Transition of Deflagration (299)** A. Tsunoda, Y. Morii, K. Maruta	**On the Re-Initiation of an Attenuated Detonation Wave Following an Abrupt Area Expansion (214)** M. Peswani, B. Maxwell	**Issues for the Creation of the DRTF - A Large-Scale Facility for Study of Detonations and Explosions (77)** E. S. Oran, K. Zipf, K. Thomas, V. Gamezo, S. I. Jackson, E. Petersen	**Effects of Particle Diameter on the Interactions Between a Circular Particle Cloud and Hydrogen Detonation Wave (56)** Y. Xu, H. Zhang
9:50	**Effect of Ejector Channel Arrangement on Performance of Rotating Detonation Ejector (303)** Q. Wu, Z. Lin	**OH/CH/C2 Chemiluminescence of N2 diluted CH4 Edge Flames under Small Fuel Concentration Gradients (302)** J. K. Park, M. J. Lee, N. I. Kim	**Detonation Initiation After a Backward Facing Step (98)** Y. Poroshyna, S. Lau-Chapdelaine, G. Ciccarelli	**Machine Learning-Based Prediction of Global Equivalence Ratio from Absorption Spectra on a Swirl Combustor (161)** C. W. Bong, Y. J. Kwon, M. S. Bak	**Shock-Initiated Fragmentation of n-Dodecane Nano-droplets: A Molecular Dynamics Study (268)** N. Kateris, E. Genter, H. Wang
10:15	Coffee break				

FRIDAY, JULY 28					
ROOM	CONVENTION HALL A	CONVENTION HALL B	LECTURE ROOM	MEETING ROOM 2	MEETING ROOM 3
Set F2	**DDT 3** Chairs: A. K. Hayashi, S. Maeda	**Flame Instabilities 2** Chairs: S. Kim, D. Fernández-Galisteo	**Detonation Structure 3** Chairs: M. Radulescu, M. Short	**Metalized Reactions 2** Chairs: J. Thomas, P. Utkin	**Jet Ignition** Chairs: I. S. Jeung, T. Skjold
10:45	**CH4-O2 Flame Acceleration Morphology: A Comparative Analysis Under Different Hydrocarbon Fuel, Channel Geometry and Scale (242)** C. C. Mejia-Botero, F. Virot, J. Melguizo-Gavilanes	**Influences of Axial-Fuel-Staging on Combustion Dynamics of a Lean Premixed Combustor (152)** Y. S. Choi, K. T. Kim	**Treatment of Boundary Conditions in Three-Dimensional Large Eddy Simulations of Calorically Perfect Gas Detonations (14)** B. Maxwell, W. H. Wang	**Reaction Propagations of Al/CuO Nanothermite Layers Assembled on Copper Grids (106)** W. L. Hsu, M. H. Wu	**The Influence of Air Dilution with Nitrogen on Hydrogen Jet Ignition (114)** O. A. Nassar, Y. Kozak, M. M. Alves, S. Kaundinya Oruganti, L. Ishay, S. Kudriakov, E. Studer
11:10	**The Effect of Composition Gradients on Deflagration-to-Detonation Transition in Fuel-Rich Mixtures of H2-air in an Obstructed Channel (309)** J. Fan, H. Xiao	**Relationship between Combustion Noise and Premixed Flame Behaviors in a Backward-Facing-Step Burner (279)** J. H. Yeo, N. I. Kim	**Steady Detonation in Gaseous Pyrolysis Products of Ammonium Dinitramide and Its Related Ionic Liquids (87)** N. Itouyama, J. Kasahara, X. Huang, R. Mevel	**Numerical Investigation on the Oscillatory Propagation of Intermetallic Reaction Waves in Microscale Aluminum/Nickel Multilayers (155)** K. Kim, M. H. Lee	**Turbulent Hot Jet Ignition of Ultra-Lean H2/Air Mixtures: Influence of the Orifice Diameter (211)** J. Höltkemeier-Horstmann, D. Markus, S. Essmann
11:35	**Flame Acceleration and Transition to Detonation in Acetylene-Based Mixtures (259)** I. Yakovenko, A. Kiverin, A. Yarkov, P. Krivosheyev, A. Novitski, O. Penyazkov	**Re-stabilization of Acoustic Parametric Instability for Downward Propagating Premixed Flames of Le>1 Mixtures (28)** A. K. Dubey, O. Fujita	**Non-Equilibrium Effects in H2-O2-Diluent Mixtures Using the ZND Reactor Model (78)** J. Vargas, K. P. Chatelain, D. Lacoste, X. Huang, R. Mevel	**Metallothermic Combustion Reaction on Synthesis of Titanium Boride-Spinel Composites (276)** C. L. Yeh, F. Y. Zheng	**Effects of Helium and Carbon-Dioxide Dilutions on Hydrogen Jet Ignition in a Shock Tube (118)** M. M. Alves, O. Nassar, S. Kudriakov, E. Studer, L. Ishay, Y. Kozak
12:00		**Premixed Flames in Narrow Heated Channels of Circular Cross-Section: Steady-State Solutions, Their Linear Stability Analysis and Dynamics (53)** C. Jimenez, D. Fernandez-Galisteo, V. N. Kurdyumov		**Performance and Combustion of Characteristics of Diesel Blended with Ceria Nano-Additives (157)** A. Jain, U. Saini, A. D. Ambekar, T. Thajudeen	**Combustion Characteristics of Inverse Oxygen/Methane Coaxial Jet Flames at Elevated Pressure (57)** Y. H. Kim, J. H. Kim, O. C. Kwon
12:25	Farewell Party				