

The 14th Asia-Pacific Conference on Combustion (ASPACC 2023) Program

Sunday 5/14/2023	
1530-1900	Kaohsiung Exhibition Center 3F Conference Center
	Registration
1800-2000	305
	Welcome Reception

Monday 5/15/2023	
Room	301a
0845-0900	Opening Ceremony
0900-1000	<u>Plenary Lecture</u> Data-Enabled Design of Combustion Systems Prof. Vigor Yang <i>Georgia Institute of Technology, USA</i> Chair: Prof. Shenqyang Shy (National Central University, Taiwan)
1000-1020	Coffee Break
1020-1105	<u>Keynote Lecture I</u> Challenges and Opportunities for Hydrogen Premixed Combustion Prof. Mohsen Talei <i>University of Melbourne, Australia</i> Chair: Prof. Naian Liu (University of Science and Technology of China, China) Prof. Hai Wang (Stanford University, USA)
1105-1150	<u>Keynote Lecture II</u> Development of Reliable and Efficient Skeletal/Reduced Chemical Mechanisms for Practical and Blended Fuels Prof. Ming Jia <i>Dalian University of Technology, China</i> Chair: Prof. Assaad Masri (University of Sydney, Australia)
1150-1320	305
	Lunch

Monday 5/15/2023

Room	304a	304b	303a	303b	302a	302b	303e	302e
	Turbulent Flames I	Laminar Ammonia Flames	Kinetics I	Gas Turbines I	Wastes & Coal	Fire I	Supersonic Combustion Ramjet	Soot & Nanomaterials
	<i>Kaoru Maruta</i>	<i>Hisashi Nakamura</i>	<i>Mani Sarathy</i>	<i>Hsin-Yi Shih</i>	<i>Ryo Yashiie</i>	<i>Chia Lung Wu</i>	<i>Akihiro Hayakawa</i>	<i>Chao-Wei Huang</i>
1320-1340	95 Influence of a coaxial plasma actuator on the flame stabilization of non-premixed jet flames <i>Jun-Lin Chen, Chiang Fu, Ying-Hao Liao</i>	122 Unsteady extinction of ammonia premixed flames against an isothermal wall <i>Takuya Tomidokoro, Takeshi Yokomori, Hong G Im</i>	352 On the autoxidation of limonene under cool flame conditions: formation of oxygenated and aromatic products <i>Zahraa Dbouk, Nesrine Belhadj, Maxence Lailliau, Roland Benoit, Philippe Dagaut</i>	100 Flame dynamics in a pressurised annular combustor with simultaneous longitudinal-azimuthal thermoacoustic modes <i>Byeonguk Ahn, Håkon Nygård, Larry Li, Nicholas A Worth</i>	159 Effects of gas compositions on NOx formation during char combustion in waste incineration <i>Ryo Yoshiie, Kazutaka Tsukamoto, Yasuaki Ueki, Ichiro Naruse, Taichi Usuki, Tomohiro Denda</i>	327 Effects of capacity and charge of lithium ion battery on fire characteristics <i>Sin Woo Kim, Eui Ju Lee</i>	140 Effects of ethylene penetration height and equivalence ratio on combustion instabilities in a scramjet model combustor with a cavity flame holder <i>Shoya Yasunaga, Shota Nishimoto, Jeonghoon Lee, Shinji Nakaya, Mitsuhiro Tsue</i>	227 Peculiar characteristics of magnesium subjected to hygrothermal aging <i>Yejun Lee, Juyoung Oh, Jack J Yoh</i>
1340-1400	111 Modelling of a turbulent premixed flame series using an MMC-LES model with a shadow position reference variable with locally adjusted model parameters <i>Yashar Shoraka, Sebastian Galindo Lopez, Matthew Cleary, Assaad Masri, Alex Klimenko</i>	35 Computed NOx emission and flammability of opposed-jet CH ₄ /NH ₃ and H ₂ /NH ₃ diffusion flames <i>Yong-Yi Zhuang, Yu-Hung Lin, Hsin-Yi Shih</i>	17 Partial oxidation of H ₂ S: a kinetic modeling study and characterization of important reactions with quantum chemistry calculations <i>Manuel Monge Palacios, Qi Wang, Amjad Shaarawi, Adrian Cavazos Sepulveda, S Mani Sarathy</i>	213 The role of gas supply-driven instability on dynamic flame responses and combustion instability <i>Jaehyun Nam, Jack J Yoh</i>	158 Chemical structure effect on agglomeration and combustion characteristic of high volatile coals in blast furnace <i>Min-Woo Kim, Jang-Ho Jo, Dae-Gyun Lee, Byoung-Hwa Lee, Chung-Hwan Jeon</i>	229 An experimental study on thermal runaway of lithium-ion battery by external temperature <i>Juwon Park, Sung Hwan Yoon</i>	234 A study on the vitiation air heater for the direct-connect Scramjet combustor and preliminary ignition test of the Scramjet combustor. <i>Inhoi Koo, Jae-Hyuk Lee, Min-Su Kim, Eun-Sung Lee, Hyung-Seok Han, Jeong-Yeol Choi</i>	19 Effects of gas-phase diffusion transport on solid-state combustion synthesis <i>Chun-Liang Yeh, Kuan-Ting Liu</i>

Monday 5/15/2023

Room	304a	304b	303a	303b	302a	302b	303e	302e
1400-1420	<p>141 Autoignition in a premixed jet flame in a crossflow</p> <p><i>Harikrishna Tummalapalli, Evatt Hawkes, Dominic Ma</i></p>	<p>195 A unified definition of the mixture fraction in nonpremixed ammonia-hydrogen flames</p> <p><i>Lorenzo Angelilli, Pietro Paolo Ciottoli, Francisco Hernandez-Perez, Mauro Valorani, Hong G Im</i></p>	<p>369 Theoretical study on the tert-butyl hydroperoxide pyrolysis reaction</p> <p><i>Yingjia Zhang, Binxu Pu, Qian Zhao, Zuohua Huang</i></p>	<p>173 Analysis of flame dynamics in a stratified swirl burner using spectral proper orthogonal decomposition</p> <p><i>Junhua Zhang, Qiang An, Zhipeng Yang, Xin Hui, Xiao Han</i></p>	<p>49 Experimental and modeling study of sewage sludge smoldering combustion at different airflow rates</p> <p><i>Wei Zhang, Xiaowei Wang, Haowen Li, Zixin Yang, Qianshi Song, Xiaohan Wang</i></p>	<p>349 Experimental investigation of thermal behaviors of the components of high nickel lithium-ion batteries under various states of charge</p> <p><i>Ayushi Mehrotra, Juyoung Oh, Yejun Lee, Jack J Yoh</i></p>	<p>246 Comparison of the ignition and combustion characteristics of single and tandem cavity Scramjet combustor using a μPDE</p> <p><i>Min-Su Kim, Jae-Hyuk Lee, Inhoi Koo, Eun-Sung Lee, Hyung-Seok Han, Jeong-Yeol Choi</i></p>	<p>244 A tri-variate extension of the moment projection method for multicomponent particle formation and evolution</p> <p><i>Tongtong Yan, Zhiwei Zhao, Shaohua Wu, Dezhi Zhou</i></p>
1420-1440	<p>277 Development of three-feed stream steady laminar flamelet model in OpenFOAM: assessment for a reacting jet issuing into a hot and diluted coflow</p> <p><i>Danh Nam Nguyen, Chun Sang Yoo</i></p>	<p>200 The impact of Soret diffusion on the product gas characteristics of premixed laminar ammonia/hydrogen/air flames stabilised in a stagnation flow</p> <p><i>Marina Kovaleva, Gabriel J Gotama, Akihiro Hayakawa, Ekenechukwu Okafor, Sophie Colson, Andrew Crayford, Taku Kudo, Hideaki Kobayashi</i></p>	<p>207 Shock tube and modeling study of ethylene and propene ignition delay times diluted in O₂/CO₂ atmosphere</p> <p><i>Chao Peng, Chun Zou</i></p>	<p>329 Study on the influence of the external acoustic forcing on lean blow-off limit in a confined premixed dme/air swirling flame</p> <p><i>Chen Fu, Meng Wang, Xiaoyang Wang, Kunpeng Liu, Yifeng Jiang, Yi Gao</i></p>	<p>271 Fast catalytic pyrolysis of kraft lignin into monocyclic aromatic hydrocarbons over in-situ generation of Fe-based catalyst</p> <p><i>Haoran Liu, Yang Shen, Yanan Zhu, Zhongyue Zhou, Fei Qi</i></p>	<p>289 Can we compare different façade fire standards fairly?</p> <p><i>Yizhou Li, Zilong Wang, Xinyan Huang</i></p>	<p>283 High-speed deflagration in narrow channels at cryogenic temperatures</p> <p><i>Canruo Chen, Damir Valiev</i></p>	<p>30 Evaluating the rings cleavage mechanism of polycyclic aromatic hydrocarbons in supercritical water: a ReaxFF molecular dynamics study</p> <p><i>Hao Zhao, Yingjia Zhang, Zuohua Huang</i></p>

Monday 5/15/2023

Room	304a	304b	303a	303b	302a	302b	303e	302e
1440-1500	290 Investigation of near-wall turbulent prediction for burning-off removal process of carbon deposits on coke-oven walls <i>Yi-Da Chung, Keh-Ching Chang</i>		206 Experimental and modeling study of ignition delay times of natural gas mixtures with CO ₂ dilution <i>Wenxiang Xia, Jinling Yang, Chun Zou</i>	128 Numerical prediction of the central recirculation zone in a v-shaped swirling flame <i>Qiuxiao Wang, Yongzhi Ren, Xi Xia, Fei Qi</i>	272 Study of the pyrolysis characteristics of plastics by soft photoionization mass spectrometry <i>Hai-Rong Ren, Haoran Liu, Cunhao Cui, Yanan Zhu, Zhongyue Zhou</i>	152 Effect of boundary material and fuel pan size on flashover occurrence and energy distribution in compartment fires <i>Ting Xia, Hongli Ruan, Yu Wang</i>		
1500-1520	Coffee Break							
	Turbulent Hydrogen Flames I <i>Donghyuk Shin</i>	Laminar Flames I <i>Yueh-Heng Li</i>	Mild Combustion <i>Mahendra Reddy Vanteru</i>	Spray <i>Wei-Cheng Wang</i>	Diagnostics - Absorption Spectroscopy <i>Chih-Yung Wu</i>	Internal Combustion Engines - Ammonia <i>Yi Yang / Cho-Yu Lee</i>	Propellants <i>Yao-Chung Hsu</i>	Energetic Materials I <i>Jai-ick Yoh</i>
1520-1540	105 Stabilization mechanism for non-premixed lifted flames in a methane-hydrogen blended jet through the laminar to turbulent transition <i>Dong Seok Jeon, Nam Il Kim</i>	322 Stochastic modelling of premixed combustion in microchannels <i>Matthew M Kratzer, Suresh Bhatia, Alex Klimenko</i>	381 Ammonia/hydrogen mild combustion in a cyclonic burner <i>Giancarlo Sorrentino, Giovanni Battista Ariemma, Pino Sabia, Raffaele Ragucci, Mara de Joannon</i>	263 On the application of CH planar laser-induced fluorescence in flame spray pyrolysis <i>Callum M Kennedy, Matthew J Dunn, Assaad Masri</i>	333 Multi-species laser sensing in shock tube kinetics using CEAS and DDAE <i>Mhanna Mhanna, Mohamed Sy, Ali Abualsaud, Jiabiao Zou, Ali Elkhazraji, Aamir Farooq</i>	96 Combustion enhancers for ammonia fuelled compression ignition engine <i>Gabriel J Gotama, Yi Yang, Xingcai Lu</i>	214 Theoretical study of proton transfer reaction in energetic ionic compounds <i>Jay Patel, Arindrajit Chowdhury, Neeraj R Kumbhakarna</i>	291 Mesoscale modeling of deflagration on the surface of metalized solid fuels <i>Hong-Suk Choi, Jack J Yoh</i>

Monday 5/15/2023

Room	304a	304b	303a	303b	302a	302b	303e	302e
1540-1600	<p>323 Effect of impingement position on the structure of non-premixed hydrogen-oxygen impinged jet flames</p> <p><i>Hazim Shehab, Yong Fan, Norihiko Iki, Osamu Kurata, Taku Tsujimura, Hirohide Furutani</i></p>	<p>109 Head-on quenching of an n-heptane/air premixed flame in a stagnation flow</p> <p><i>Hibiki Sakuma, Takuya Tomidokoro, Takeshi Yokomori, Hong G Im</i></p>	<p>193 Experimental study on combustion and NO characteristics of ammonia-hydrogen mixture in lab-scale flameless combustion system</p> <p><i>Jiho Yu, Jinje Park, Jongsup Hong, Youngjae Lee</i></p>	<p>232 Experimental spray characterization for jet-a1 under temperature controlled subcritical, transcritical, and supercritical spray conditions</p> <p><i>Kaushik Nonavinakere Vinod, Robert Kempin, Tiegang Fang</i></p>	<p>20 Selective BTEX detection using laser absorption spectroscopy in the CH bending mode region</p> <p><i>Ali Elkhazraji, Joury Aldhawyan, Mhanna Mhanna, Mohamed Sy, Mohammad Adil, Mohammad Khaled Shakfa, Aamir Farooq</i></p>	<p>275 Numerical analysis of fuel evaporation and mixing in a passive pre-chamber methanol opposed-piston engine</p> <p><i>Rafael Menaca, Mickael Silva, Kevin Moreno-Cabezas, Giovanni Vorraro, James WG Turner, Hong G Im</i></p>	<p>132 Linear burn rate of gelled hydroxylammonium nitrate aqueous solutions</p> <p><i>Yu-Jia Chen, I-You Tsai, Yan-Ze Song, Ming-Hsun Wu</i></p>	<p>155 Speed of a flame spreading over a methane hydrate surface</p> <p><i>Otabek Nigmatov, Tishihisa Ueda, Shinnosuke Nishiki, Oksana Ismailova</i></p>
1600-1620	<p>178 On the relationship between displacement speed and curvature in hydrogen/methane premixed flames</p> <p><i>Jen Zen Ho, Mohsen Talei</i></p>	<p>139 Effect of a shear flow on the stability of premixed and non-premixed flames</p> <p><i>Joel Daou, P Rajamanickam, A Kelly, J Lande</i></p>	<p>328 Analysis of the borderline of no-ignition and mild combustion regimes of methane, propane, and syngas fuels based on ignition delay time</p> <p><i>Srinivasarao Muddada, V Mahendra Reddy</i></p>	<p>337 Profiles of flow parameters of supercritical n-heptane flows inside a convergent nozzle</p> <p><i>Guigui Liu, Yuzhen Lin, Xin Xue, Xin Hui, Chih-Jen Sung</i></p>	<p>142 Investigation of pressure effects on cool flame ignition temperature through the gas temperature-compensated HCHO-TDLAS measurement</p> <p><i>Minhyeok Lee, Gengyu Li, Yuji Suzuki</i></p>	<p>313 Effect of egr and hydrogen stratification on flame-wall interaction</p> <p><i>Masato Sakurai, Yamato Shiotsuki, Masayasu Shimura, Mamoru Tanahashi</i></p>	<p>331 Computational modeling and simulation of ignition and combustion of nitromethane</p> <p><i>SK Hossen Ali, Dilip Sundaram</i></p>	<p>78 Nanothermite assembly on copper wire mesh blanketed with CuO nanowires via electrophoretic deposition of aluminum nanoparticles</p> <p><i>Wan-Lien Hsu, Ming-Hsun Wu, Chia-Ting Lin</i></p>

Monday 5/15/2023

Room	304a	304b	303a	303b	302a	302b	303e	302e
1620-1640	<p>166 An evaluation of micro-mixing models in transported pdf simulations of a hydrogen flame with strong thermodiffusive instabilities</p> <p><i>Xiao Wang, Tianwei Yang, Lukas Berger, Heinz Pitsch, Hua Zhou, Zhuyin Ren</i></p>	<p>177 Flickering buoyant diffusion flames in rotatory flows</p> <p><i>Tao Yang, Peng Zhang</i></p>	<p>222 Mild combustion of a premixed NH₃ jet flame in hot coflow</p> <p><i>Guochang Wang, Xiangtao Liu, Pengfei Li, Zhaohui Liu, Jianchun Mi</i></p>	<p>196 Spray and flow field characterizations of a two-stage counter-swirl injector</p> <p><i>Tao Chen, Liangliang Xu, Bowen Yu, Xiaoxing Feng, Fei Qi, Xi Xia</i></p>	<p>53 Temperature and multi-species measurements during CH₄/H₂/NH₃ oxidation behind reflected shock waves</p> <p><i>Dao Zheng, Dong He, Yanjun Du, Yanjun Ding, Zhimin Peng</i></p>	<p>250 Effects of fuel injection strategy and ammonia energy ratio on combustion and emissions of ammonia-diesel dual-fuel engine</p> <p><i>Shouying Jin, Binyang Wu, Zhenyuan Zi, Puze Yang, Taifeng Shi</i></p>	<p>284 Understanding the thermal behaviour of electrically controlled solid propellant with different metal additives</p> <p><i>Rajendra Rajak, Daehong Lim, Gnanaprakash Kanagaraj, Jack J Yoh</i></p>	<p>23 Modified multiflame model for AP-HTPB composite propellant combustion nanoparticles</p> <p><i>Neeraj Kumar Pradhan, Arindrajit Chowdhury, Debasis Chakraborty, Neeraj R Kumbhakarna</i></p>
1640-1700	<p>365 Investigation of influence of chemical kinetics mechanisms for hydrogen jet flame in a vitiated co-flow</p> <p><i>Yuyang Zhang, Hao Zhao, Zuohua Huang, Yingjia Zhang</i></p>	<p>192 Dynamical modes of triple flickering flames</p> <p><i>Yicheng Chi, Tao Yang, Peng Zhang</i></p>	<p>223 Mild combustion characteristics of a premixed ammonia jet flame in hot coflow: effects of coflow temperature and oxygen-level</p> <p><i>Guochang Wang, Xiangtao Liu, Pengfei Li, Zhaohui Liu, Jianchun Mi</i></p>	<p>37 A reduced reaction mechanism for an isoparaffinic alcohol-to-jet synthetic paraffinic kerosene (AtJ-SPK)</p> <p><i>Jiangkuan Xing, Zhenhua An, Yanqi Zhang, Ryoichi Kurose</i></p>	<p>353 Numerical study of multiband-multiline tomographic absorption spectroscopy for flame measurements</p> <p><i>Tengfei Jiao, Kin-Pang Cheong, Wenju Hu, Yushuai Liu, Liuhao Ma</i></p>	<p>316 Jet-ignition of ammonia using hydrogen, n-heptane, and iso-octane as auxiliary fuels in a rapid compression machine</p> <p><i>Zhang Ridong, Wei Liu, Qihang Zhang, Zhi Wang</i></p>	<p>358 Low-pressure ignition and combustion characteristics of a dual-mode ionic liquid propellant in a catalyst bed reactor</p> <p><i>Zun Wang, Jie Fang, Shaolong Li, Zhaopu Yao, Shuiqing Li</i></p>	<p>270 Comparison between decomposition kinetics of mechanoactivated and recrystallized ammonium perchlorate composite solid propellant</p> <p><i>Sairaj Eknath Gaunekar</i></p>

End of Day

Tuesday 5/16/2023

Room	304a						
0830-0915	<p align="center"><u>Keynote Lecture III</u> Low Emission Combustor Technologies for Gas Turbine Engine Prof. Debi Prasad Mishra <i>NITTR Kolkata, IIT Kanpur, India</i> Chair: Prof. Oh Chae Kwon (Sungkyunkwan University, South Korea)</p>						
0915-1000	<p align="center"><u>Keynote Lecture IV</u> Combustion Instability in a Dual-nozzle Gas Turbine Combustor Prof. Youngbin Yoon <i>Seoul National University, South Korea</i> Chair: Dr. Pandip Kumar Pandey (Belcan India and UPES Dehradun, India) Prof. Chih-Jen (Jackie) Sung (University of Connecticut, USA)</p>						
1000-1020	Coffee Break						
Room	304a	304b	303a	303b	302a	302b	303e
	<p align="center">Gas Turbines - Ammonia <i>Jeong Park</i></p>	<p align="center">Laminar Non-Premix Flames <i>Nam Il Kim</i></p>	<p align="center">Kinetics - Low Carbon Fuels <i>Seongkyun Im</i></p>	<p align="center">Turbulent Flames II <i>Chih-Jen (Jackie) Sung</i></p>	<p align="center">Diagnostics I <i>Matthew Dunn</i></p>	<p align="center">Fire II <i>Chia Lung Wu</i></p>	<p align="center">Catalytic Reactions <i>Zhandong Wang / Jiun-Ming Li</i></p>
1020-1040	<p>25 Combustion analysis of a micro gas turbine combustor with CH₄/NH₃ fuel blends <i>Sz-Pei Ho, Cheng Cheng, Hsin-Yi Shih</i></p>	<p>85 The flame height measurements of inverse diffusion methane flames under various conditions: reactant flowrates and oxygen concentration <i>Carson Chu, Ibrahim Alsheikh, Peng Liu, William Roberts</i></p>	<p>345 Improving chemical mechanism for NH₃/H₂ combustion and adaptation of artificial neural network (ANN) for acceleration of the simulation <i>Serang Kwon, Seongkyun Im</i></p>	<p>224 Blow-off characteristics evaluations by steady-state rans simulation and transient quasi-dns for a partially-premixed coaxial burner <i>Kazuki Abe, Youhi Morii, Kaoru Maruta</i></p>	<p>260 The effect of dual-wavelength selection on the temperature measurement by two-color pyrometry for coal combustion in premixed methane/air <i>Ming-Wei Dai</i></p>	<p>243 Effect of inner diameter on horizontal flame spread over electric wire in a cylindrical tube <i>Anju Funasaki, Yusuke Konno, Nozomu Hashimoto, Feng Guo, Osamu Fujita</i></p>	<p>308 Study on combustion characteristic and performance optimization of hydrocarbon premixed flames in stainless steel-platinum segmentation reactor <i>Cheng-Han Lin, Hsiao-Hsuan Kao, Yueh-Heng Li</i></p>

Tuesday 5/16/2023

Room	304a	304b	303a	303b	302a	302b	303e
1040-1100	<p>240 Effects of composition on the combustion characteristics of ammonia-hydrogen/air mixtures in a swirl model combustor <i>Jae Hyun Kim, Jae Ho Song, Oh Chae Kwon</i></p>	<p>107 Stabilized laminar lifted flame of pure ethane in a non-premixed jet <i>Gyu Jin Hwang, Nam Il Kim</i></p>	<p>356 A comparative study of reaction mechanisms towards predicting NO_x in methane/hydrogen premixed flames <i>MD Adil, Krithika Narayanaswamy</i></p>	<p>241 Modeling of turbulent flame speed and turbulent Markstein length of a harmonically oscillating flame <i>Jungho Sohn, Donghyuk Shin</i></p>	<p>208 A study on diagnosis of combustion instability using various statistical analysis of dynamic pressure signals <i>Dae Jin Jang, Min Kuk Kim, Jeongjae Hwang, Min Chul Lee</i></p>	<p>253 Horizontal seismic effect on upward flame spread <i>Jui-Sen Liao, Tzu-Yan Tseng, Kuang-Chung Tsai</i></p>	<p>262 Micro-pin-fin heat sink design with flow normalization <i>Jer-Huan Jang, Syed Masihuzzaman</i></p>
1100-1120	<p>321 Numerical investigation of the diluting effects of secondary air on the primary combustion zone of two-stage rich-lean ammonia gas turbine combustors <i>Ekenechukwu C Okafor, Hirofumi Yamashita, Osamu Kurata, Takahiro Inoue, Taku Tsujimura, Norihiko Iki, Akihiro Hayakawa, Shintaro Ito, Masahiro Uchida, Hideaki Kobayashi</i></p>	<p>31 Nitrous oxide supported combustion and NO_x formation of counter-flow ethylene diffusion flames <i>Chun-Wei Huang, Dong Chen, Hsin-Yi Shih, Taro Hirasawa</i></p>	<p>153 Comparison of effects of H₂ and CH₄ on NH₃ combustion in air: a reactive molecular dynamics study <i>Jing Wang, Xi Zhuo Jiang</i></p>	<p>57 Numerical simulation of upward bending of horizontal subsonic jet spray flame under sub-atmospheric pressure <i>Kai Xie, Yunjing Cui, Xiufeng Tan</i></p>	<p>373 Application of quantitative Raman spectroscopy to turbulent flames of H₂/N₂ <i>Andrew R Macfarlane, Assaad Masri, Matthew J Dunn, Hao Tang, Gaetano Magnotti</i></p>	<p>375 Investigation on the opening location affecting the delay time of backdraft <i>Chia Lung Wu, Carvel Ricky, Wen-Yen Juan</i></p>	<p>292 Surface dynamics of CeO₂-supported noble metal catalysts <i>Zuo Li, Mohamed Marei, Assaad R Masri, Alejandro Montoya</i></p>

Tuesday 5/16/2023

Room	304a	304b	303a	303b	302a	302b	303e
1120-1140	<p>55 Pilot power ratio effect on the structure of turbulent NH₃-CH₄-air swirl flames at atmospheric pressure</p> <p><i>Cristian D Avila Jimenez, Thibault Guiberti, William Roberts</i></p>	<p>103 Tube size effects on diffusion flame extinction in O₂+CO₂ coflow at elevated pressure</p> <p><i>Hun Young Kim, Nam Il Kim</i></p>	<p>163 A reduced chemical kinetic mechanism for ammonia combustion targeted on multiple prediction objectives</p> <p><i>Huaiyin Wang, Tianyou Wang, Ming Jia, Zhen Lu, Yachao Chang, Kai Sun</i></p>	<p>226 A hybrid FPV-FRC combustion model based on adaptive scalar transport</p> <p><i>Zhiwei Zhao, Tongtong Yan, Dezhi Zhou</i></p>	<p>160 Enhancement of ammonia auto-ignition with low-carbon fuels: multi-species time history measurements and kinetics modeling</p> <p><i>Jiabiao Zou, Mohammad Adil, Ali Elkhazraji, Aamir Farooq</i></p>	<p>239 A numerical study on fire whirls formed behind an L-shaped wall</p> <p><i>Ashutosh Bharti, S Muthu Kumaran, Vasudevan Raghavan</i></p>	<p>171 Direct observation of reactive intermediates in the catalytic partial oxidation of iso-octane on nickel</p> <p><i>Jijun Guo, Zaili Xiong, Yuwen Deng, Bingzhi Wang, Hao Lou, Meirong Zeng, Zhandong Wang, Zhongyue Zhou, Wenhao Yuan, Fei Qi</i></p>
1140-1200	<p>363 Detection of extreme events in hydrogen combustion relevant to reheat burners</p> <p><i>Dibyajyoti Nayak, Konduri Aditya</i></p>	<p>56 Structure of formic acid and n-decane blended counterflow flames</p> <p><i>Adamu Alfazazi, Et-touhami Es-sebbar, Jiajun Li, S Xiayuan Zhang, Marwan Abdullah, Mourad Younes, Mani Sarathy, Bassam Dally</i></p>	<p>98 The effect of the addition of ammonia on the oxidation of dimethyl ether: an experimental and modeling study</p> <p><i>Wang Qiao, Liao Wanxiong, Haodong Chen, Bin Yang</i></p>	<p>357 Large eddy simulation of a turbulent dimethyl ether jet flame with direct moment closure model</p> <p><i>Runzhi Liu, Kun Luo, Tai Jin, Jianren Fan</i></p>	<p>104 A study of characteristics of NH₃/n-heptane dual fuel using optical diagnostic</p> <p><i>Hai Feng Liu, Tengda Song, Mingfa Yao</i></p>	<p>147 Characteristics of a blue whirl influenced by different formation conditions</p> <p><i>Yifan Yang, Haodong Zhang, Xi Xia, Fei Qi</i></p>	<p>125 Non-thermal plasma catalytic NH₃ dehydrogenation over ceria-based catalysts</p> <p><i>Yibo Gao, Erjiang Hu, Geyuan Yin, Zuohua Huang</i></p>
1200-1230	Lunch To-Go						
1230-1900	<p>Excursion <i>Taiwan Indigenous Culture Park</i></p>						

End of Day

Wednesday 5/17/2023

Room	304a					
0830-0915	<p style="text-align: center;"><u>Keynote Lecture V</u> Quantitative Measurement of Wall Chemical Effects for Hydrocarbon/Ammonia Flames Prof. Yuji Suzuki <i>University of Tokyo, Japan</i> Chair: Prof. Bassam Dally (KAUST, Saudi Arabia)</p>					
0915-1000	<p style="text-align: center;"><u>Keynote Lecture VI</u> Recent Research and Developments on Hydrogen Energy Applications in Taiwan Prof. Ta-Hui Lin <i>National Cheng Kung University, Taiwan</i> Chair: Dr. Toshiro Fujimori (IHI, Japan)</p>					
1000-1020	Coffee Break					
Room	304a	303a	303b	302a	302b	303e
	Ammonia Cofiring I <i>Abdullah Ramadan / Adamu Alfazazi</i>	Low Temperature Kinetics <i>Menrong Zeng / Wai Siong Chai</i>	Gas Turbines II <i>Nicholas A Worth</i>	Solid Fuel I <i>Takuya Yamazaki</i>	Fire III <i>Tzu-yan Tseng / Chia Lung Wu</i>	Detonation Engines <i>Jiun-Ming Li</i>
1020-1040	248 Development of global combustion mechanism of NH ₃ for computational fluid dynamics on cofiring with pulverized coal <i>Woosuk Kang, Jongmin Park, Changkook Ryu</i>	64 Experimental study of 2-methylbutanol autoignition <i>Ruozhou Fang, Chih-Jen Sung</i>	336 PIV measurement and numerical simulation of flow field in a novel burner with a cap <i>Ching-Huan Tseng, Pei-Hsun Huang, Kuo-Long Pan</i>	68 Study of powder-CH ₄ -air "hybrid" flames in a stagnation-point flow <i>Ryoki Okada, Haruya Yata, Daiki Matsugi, Takuya Yamazaki, Yuji Nakamura</i>	87 A study of building fire safety performance under smoldering <i>Wai Kit Cheung, Xinyan Huang, Yanfu Zeng, Shaorun Lin</i>	306 Numerical investigation on the effect of wall curvature on propulsive performance of rotating detonation engine <i>Moeno Miyashita, Akiko Matsuo, Eiji Shima, Akira Kawasaki, Ken Matsuoka, Jiro Kasahara</i>

Wednesday 5/17/2023

Room	304a	303a	303b	302a	302b	303e
1040-1100	<p>101 Evaluation of the effects of ammonia co-firing of supercritical pulverized coal boilers on plant efficiency and greenhouse gas reduction with economic analysis</p> <p><i>Minseob Lim, Jaewook Lee, Won Yang, Jiseon Park, Ohchae Kwon, Sehyun Baek, Junhwa Chi, Kyoungil Park, Seongil Kim</i></p>	<p>188 Ignition delay time and flame speed validation of a reduced n-dodecane mechanism using a hybrid reduction method</p> <p><i>Anurag Dahiya, Ying-Di Li, Zi-Jia Wang, Yun-Jui Wu, Kuang C Lin</i></p>	<p>24 Experimental study on non-reactive flow characteristics of a novel multi-swirl lean direct injection burner</p> <p><i>Sarath Perikathra, T M Muruguanandam</i></p>	<p>334 Combustion modeling of multi-grains in closed bomb using volume of fluid and fluid structure interaction methods</p> <p><i>Jonggeun Park, Jeongseok Kang, Hong-Gye Sung</i></p>	<p>97 Semi-empirical models of density jump position and temperature attenuation of smoke layer in horseshoe tunnel fire</p> <p><i>Aoi Tanno, Yasushi Oka</i></p>	<p>50 Overview of shuttling transverse combustion: continuous detonation in a linear wall-bounded channel</p> <p><i>Xin Huang, Po-Hsiung Chang, Zhen Wei Teo, Jiun-Ming Li, Chiang Juay Teo, BC Khoo</i></p>
1100-1120	<p>156 Effect of ammonia co-firing in 550 MWe USC CFB boiler using CPFDF simulation</p> <p><i>Yoon-Ho Bae, Byoung-Hwa Lee, Min-Woo Kim, Chung-Hwan Jeon</i></p>	<p>94 Exploring the influence of no addition to the oxidation of n-butanol at low to intermediate temperature: experimental and kinetic modeling</p> <p><i>Yuwen Deng, Jijun Guo, Zaili Xiong, Wenhao Yuan, Meirong Zeng, Zhongyue Zhou, Jiuzhong Yang, Fei Qi</i></p>	<p>62 Dynamic response of lean premixed swirl flames to nanosecond repetitively pulsed discharges at pressures up to 2 bar</p> <p><i>Liang Yu, Aravind Balakrishnan, Deanna Lacoste</i></p>	<p>197 Experimental research on turbulent flame propagation of solid particle cloud-gaseous fuel two-phase hybrid mixture co-combustion</p> <p><i>Yu Xia, SeungMin Song, Nozomu Hashimoto, Osamu Fujita</i></p>	<p>112 Bubble nucleation and bursting in the heated molten polymers</p> <p><i>En Nagatsu, Takuya Yamazaki, Tsuneyoshi Matsuoka, Yuji Nakamura</i></p>	<p>235 An experimental study on the ignition of Scramjet combustor using μPDE</p> <p><i>Keon Hyeong Lee, Jae-Hyuk Lee, Min-Su Kim, Eun-Sung Lee, Hyung-Seok Han, Jeong-Yeol Choi</i></p>
1120-1140	<p>202 Experimental investigation of burned gas distribution in high temperature air combustion fueled by $\text{NH}_3\text{-CH}_4$ in a bench scale furnace</p> <p><i>Apurba Sharma, Yimin Qiao, Yuji Wakata, Yuki Hayashi, Tomohisa Miyake, Tsukasa Kishimura, Takahisa Sonoda, Akira Miyoshi, Daisuke Shimokuri</i></p>	<p>144 An experimental and modeling study on the combustion characteristics of nitrates/nitrites in an RCM</p> <p><i>Zhaohan Chu, Wanxiong Liao, Zhongkai Liu, Bin Yang</i></p>	<p>372 Numerical analysis of the effect of soot radiation on the wall temperature of the combustion chamber</p> <p><i>Zhengzhe Fang, Zhang Chi, Bosen Wang, Chunhua Yang</i></p>	<p>123 Flame spread over thin hollow cylindrical fuels and its comparison with thin planar fuels</p> <p><i>Vipin Kumar, Amit Kumar, Manu B V, Yusuke Konno, Osamu Fujita</i></p>	<p>221 Effect of fire position on fire phenomena in two rooms connected through vertical opening</p> <p><i>Yun Young Kim, Chi Young Lee</i></p>	<p>210 Numerical investigation of the detonation initiation in a model rotating detonation engine</p> <p><i>Chao Han, Cheng Tian, Majie Zhao</i></p>

Wednesday 5/17/2023

Room	304a	303a	303b	302a	302b	303e
1140-1200	<p>288 A direct numerical simulation study on spherically expanding liquid ammonia flames</p> <p><i>Zhenhua An, Jiangkuan Xing, Ryoichi Kurose</i></p>	<p>273 A study of pressure dependences of intermediates towards the low-temperature oxidation of n-heptane by synchrotron photoionization mass spectrometry</p> <p><i>Weiyue Chen, Qimei Di, Hao Lou, Jiuzhong Yang, Zhandong Wang</i></p>	<p>359 An extend measurement of auto-ignition and kinetic model assessment for RP-3 aviation kerosene</p> <p><i>Congjie Hong, Wuchuan Sun, Wenlin Huang, Wu Honghuan, Zuohua Huang, Yingjia Zhang</i></p>	<p>67 Effect of metal-modified ZSM-5 catalysts on lignin pyrolysis properties and aromatic selectivity</p> <p><i>Yang Shen, Haoran Liu, Zhongyue Zhou, Fei Qi</i></p>	<p>131 Prediction of fire-induced ceiling jet characteristics based on artificial intelligence</p> <p><i>Yanfu Zeng, Tianhang Zhang, Xinyan Huang</i></p>	
1200-1320	304b					
	Lunch					
Room	304a	303a	303b	302a	302b	303e
	<p>Ammonia Cofiring II</p> <p><i>Abdullah Ramadan / Adamu Alfazazi</i></p>	<p>Kinetics II</p> <p><i>Youn-sang Bae</i></p>	<p>Gas Turbines - Low Carbon Fuels</p> <p><i>Ekenechukwu C Okafor</i></p>	<p>Biomass & Wastes</p> <p><i>Neeraj R Kumbhakarna</i></p>	<p>Internal Combustion Engines I</p> <p><i>Cho-Yu Lee</i></p>	<p>Flame Acceleration & Detonation Modeling</p> <p><i>Jenq-Renn Chen</i></p>
1320-1340	<p>82 CFD evaluation of NH₃ cofiring with pulverized coal in a commercial tangential-firing boiler</p> <p><i>Yunha Koo, Hyunbin Jo, Seonkyo Ha, Woosuk Kang, Jongmin Park, Sangbin Park, Jongmin Lee, Sehyun Baek, Changkook Ryu</i></p>	<p>83 Numerical study on chemical behavior of thermal decomposition of methane under high temperature condition</p> <p><i>Sojeong An, Jinje Park, Youn-sang Bae, Youngjae Lee</i></p>	<p>225 NOx and CO emissions in a two-stage model gas turbine combustor with a blended fuel of methane and ammonia</p> <p><i>Juhan Kim, Jeong Park, Suk Ho Chung, Chun Sang Yoo</i></p>	<p>52 Combustion of biomedical waste in an oxygen-enriched environment</p> <p><i>Abdul Kadir M Poonawala, Shyamal Bhunia, Neeraj R Kumbhakarna, Arindrajit Chowdhury</i></p>	<p>266 A deep learning approach to predicting fuel composition effects on exhaust gas composition</p> <p><i>Nursulu Kuzhagaliyeva, Inna Gorbatenko, Andre Nicolle, S Mani Sarathy</i></p>	<p>164 Validation of a reactive flow solver based on OpenFOAM for detonation modeling</p> <p><i>Vigneshwaran Sankar, Karl P Chatelain, Josue Melguizo-Gavilanes, Deanna Lacoste</i></p>

Wednesday 5/17/2023

Room	304a	303a	303b	302a	302b	303e
1340-1400	<p>157 Comprehensive review on combustion and NOx emission for NH₃ co-firing technology in coal fired power generation <i>Byoung-Hwa Lee, Yoon-Ho Bae, Si-Hyun Cho, Chung-Hwan Jeon</i></p>	<p>304 Chemical kinetics study on the reaction of hydroxyl radical with alkenes <i>Fushimi Ryota, Tatsuo Oguchi</i></p>	<p>39 Lewis number effect for lean premixed H₂-air and CH₄-air flames during combustion instability in a low-swirl combustor <i>Judai Masugi, Takeshi Shoji, Yoshihiro Nakazumi, Ryota Fujii, Takuya Tomidokoro, Shigeru Tachibana, Takeshi Yokomori</i></p>	<p>382 Co-combustion characteristics of solid waste and coal <i>Shuhn-Shyurng Hou, Chung-Yao Hsuan</i></p>	<p>36 Predicting hybrid vehicle state of charge using time-series based deep learning models <i>Juan C Giraldo Delgado, Inna Gorbatenko, S Mani Sarathy</i></p>	<p>186 Onset of flame acceleration in unconfined propane-oxygen mixtures <i>Akihiro Ueda, Keita Tanaka, Yangkyun Kim, Wookyung Kim</i></p>
1400-1420	<p>161 An experimental study of direct iron ore reduction using ammonia <i>Zhezi Zhang, Chiemeka Okoye, Darren Matthews, Dongke Zhang</i></p>	<p>33 Skeletal oxidation mechanisms construction and derivation using reaction rate rules: a case study of C6–C14 1-alkenes <i>Shuai Huang, Yachao Chang, Ming Jia</i></p>	<p>48 Experimental study on thermoacoustic instability excitation of hydrogen-enriched premixed flame under different swirl numbers <i>Longjuan Ji, Weijie Zhang, Jinhua Wang, Guangya Hu, Zuohua Huang</i></p>	<p>252 Single pellet combustion of torrefied elephant dung <i>Yan-Ru Wang</i></p>	<p>242 Efficiency and cyclic variation of a diesel retrofit using diesel and natural gas <i>Wan Nurdiyana Wan Mansor, Mohammad Nor Khasbi Jarkoni, Samsuri Abdullah, How-Ran Chao, Sheng-Lun Lin, Daniel B Olsen</i></p>	<p>366 On the unified modeling of the hydraulic resistance-driven and Shchelkin-type laminar flame acceleration in channels <i>Canruo Chen, Damir Valiev</i></p>
1420-1440	<p>27 Reaction characteristics of coal/NH₃ co-combustion affected by the highly preheated temperature under mild mode <i>Zewu Zhang, Zhenghong Zhao, Liqi Zhang, Xiaojian Zha</i></p>	<p>355 Development and validation of compact kinetic model for high temperature oxidation of 3-hexene <i>Lalit Y Attarde, Krithika Narayanaswamy</i></p>	<p>294 Investigation of lean blow-off dynamics of a 2D bluff-body stabilized premixed flame <i>Xiaoyang Wang, Kunpeng Liu, Chen Fu, Juan Yu, Yi Gao</i></p>	<p>149 Biomedical waste combustion in a small-scale packed bed reactor: an Euler-Euler modelling approach <i>Shyamal Bhunia, Abdul Kadir Poonawala, Arindrajit Chowdhury, Neeraj R Kumbhakarna</i></p>	<p>276 A comparative tank-to-wheel life cycle assessment of hydrogen fuel cell electric, internal combustion engine, and battery electric buses operating in Saudi Arabia <i>Chengcheng Zhao, Leiliang Zheng Kobayashi, Awad Alquaity, Noliner Miralles, S Mani Sarathy</i></p>	<p>205 Rapid flame acceleration and deflagration-to-detonation transition in flowing mixtures <i>Wandong Zhao, Xinxin Wang, Jianhan Liang, Xiaodong Cai, Ralf Deiterding</i></p>

Wednesday 5/17/2023

Room	304a	303a	303b	302a	302b	303e
1440-1500	268 Experimental study of oxy-flames in a coaxial dual-shear jet burner <i>Kuanyu Wang, Xie Dingjiang, Qing Cao, Yong Tang, Baolu Shi</i>	378 Ozone-assisted low-temperature oxidation of iso-butane in a jet-stirred reactor <i>Long Zhu, Qiang Xu, Bingzhi Liu, Zhandong Wang</i>	92 Exploration of the optimal ignition position in a model gas turbine combustor <i>Xiaoyang Guo, Bowen Liu, Yunyang Liu, Erjiang Hu, Zuohua Huang</i>	311 Experimental investigation on smoldering characteristics for sewage sludge <i>Xue Shen, Hui Yan, Jun Shi</i>	310 The exergy analysis of methane, methanol, and hydrogen under constant-volume conditions <i>Jianan Wei, Haifeng Liu, Mingfa Yao</i>	
1500-1520	Coffee Break					
	Furnace - Low Carbon Fuels <i>Chun Sang Yoo</i>	Laminar Flames II <i>Carson Chu</i>	Turbulent Flames III <i>Kuo-Long Pan</i>	Diagnostics - Ammonia <i>Chih-Yung Wu</i>	Internal Combustion Engines II <i>Haifeng Liu / Sheng-Lun Lin</i>	Hydrogen Peroxide & Rocket Engines <i>Neeraj R Kumbhakarna / Yao-Chung Hsu</i>
1520-1540	281 The experiment and numerical investigations on hydrogen production from ammonia cracking: a priori study <i>Danh Nam Nguyen, Jae Hun Lee, Hae Won Seo, Hyung Jun Ahn, Beom-Sik Kim, Chun Sang Yoo</i>	367 Numerical investigation on the flame behaviors in a mesoscale channel of one backward-facing step <i>Jyun-Hao Huang, Sheng-Yen Hsu</i>	342 A study on the characteristics of the low swirl combustion generated from a hybrid fractal grid <i>Geonryul Lee, Keeman Lee</i>	119 Study of ion current characteristics in premixed ammonia-air flames <i>Dhaminda N Hewavitarane, Sadami Yoshiyama, Jotaro Arishima, Mitsuhiro Izumi, Tustomu Kusahara, Shigeki Hasegawa</i>	151 Prediction of ignition modes in shock tubes <i>Minh Bau Luong, Jiabo Zhang, Miguel Figueroa-Labastida, Aamir Farooq, Hong G Im</i>	287 Development of a 200 kgf pre-decomposition hydrogen peroxide hybrid rocket <i>Chia-Wei Chang, Hung-Wei Hsu, Hong Yuan Li, Yei-Chin Chao</i>
1540-1600	264 Thermodynamic analysis of ammonia as a blast furnace reductant followed by artificial neural network prediction of blast furnace characteristics with ammonia addition <i>Paul Sarles, Wei-Hsin Chen</i>	338 Influence of wall roughness size and fuel non-equidiffusivity on laminar boundary layer flashback <i>Louis Benteux, Damir Valiev</i>	339 Investigation of non-reaction field turbulent flow in hybrid fractal grid <i>Junghyun Kim, Keeman Lee</i>	45 Simultaneous imaging of nitric oxide and hydroxyl radical with a single laser dye laser in hydrogen jet flames <i>Karl P Chatelain, Guoqing Wang, Thibault Guiberti</i>	319 Evaluation on performance and emissions by commercial biodiesel fuels on a direct injection diesel engine <i>Mohammad Nor Khasbi Jarkoni, Wan Nurdiyana Wan Mansor</i>	228 A study on thermal decomposition of N ₂ O in high temperature reactor <i>Suhyeon Kim, Sung Hwan Yoon, Seung-Gon Kim, Daegeun Park</i>

Wednesday 5/17/2023

Room	304a	303a	303b	302a	302b	303e
1600-1620	<p>307 The collateral effects of nitrogen addition to a commercial self-aspirating burner for lowering the NO_x emissions from blended hydrogen-natural gas flames</p> <p><i>Adam J Gee, Douglas Proud, Neil Smith, Alfonso Chinnici, Paul Medwell</i></p>	<p>326 A numerical study on the determination of laminar flame speed using contracting-nozzle-generated counterflow flame configuration</p> <p><i>Wenfeng Shen, Zhijie Chen</i></p>	<p>168 (No Show) Turbulent non-premixed combustion of pyrolysis gas in a swirl burner</p> <p><i>Nana Qi, Long Yan, Zhezi Zhang, Dongke Zhang, Kai Zhang</i></p>	<p>134 Raman/Rayleigh measurements in NH₃/H₂ flames at atmospheric pressure: comparison between 1-component and 2-component approach</p> <p><i>Hao Tang, Diana Ezendeeva, Gaetano Magnotti</i></p>	<p>209 Experimental and modelling investigations of methanol fuels with different fractions of ignition additives in a compression-ignition engine</p> <p><i>Chong Cheng, Rasmus Faurkov Cordtz, Jesper Schramm</i></p>	<p>80 Study of "inverse" droplet combustion using 90 wt. % H₂O₂</p> <p><i>Daiki Matsugi, Takuya Yamazaki, Tsuneyoshi Matsuoka, Yuji Nakamura</i></p>
1620-1640	<p>312 Performance of a micro-mixing nozzle under CO₂/N₂ dilution for CH₄-O₂ combustion</p> <p><i>Xiangnan Chen, Kuanyu Wang, Xie Dingjiang, Yong Tang, Baolu Shi</i></p>	<p>361 On the stability of steady symmetric flames propagating from an open towards a closed end of a narrow channel</p> <p><i>Chengxi Miao, Damir Valiev</i></p>	<p>86 Towards accurate simulation on a three-dimensional turbulent partially premixed flame with detailed chemistry and radiative heat transfer</p> <p><i>Yang Yinan, Bai Zhiren, Hori Tsukasa, Sawada Shinya, Akamatsu Fumiteru</i></p>	<p>143 In situ measurement of NO and NH₃ in combustion emissions using mid-infrared laser absorption sensor</p> <p><i>Kun Duan, Yongbin Ji, Zhimin Lu, Shunchun Yao, Ke Xu, Xiang Zhang, Zhiming Huang, Wei Ren</i></p>	<p>199 Revisiting the ignition and combustion processes of iso-octane droplet</p> <p><i>Hengyi Zhou, Haiyu Song, Wenyi Zhang, Wenkai Liang, Yu Cheng Liu</i></p>	<p>124 Numerical analysis of hydrogen peroxide addition and oxygen-enhancement for methane combustion</p> <p><i>Annas Fauzy, Guan-Bang Chen, Fang-Hsien Wu, Tai-Hui Lin</i></p>
1640-1700		<p>360 Low to high temperature oxidation of n-dodecane/air mixtures</p> <p><i>Congjie Hong, Chunyu Wang, Yilong Ao, Wuchuan Sun, Zuohua Huang, Yingjia Zhang</i></p>	<p>182 Multilevel characterization scheme for confined turbulent diffusion flames</p> <p><i>Assiz M P, Debi Prasad Mishra</i></p>	<p>185 Investigation of the flame structure of turbulent ammonia-hydrogen-nitrogen flames by simultaneous NH and NO planar laser-induced fluorescence</p> <p><i>Guoqing Wang, William Roberts, Thibault Guiberti</i></p>	<p>169 Effects of aluminum oxide nano-particulate additives on energy performance and emission characteristics of diesel engine at various excess air coefficients</p> <p><i>Zhefeng Guo, Sheng-Lun Lin</i></p>	<p>61 Simulation of ignition process in a solid rocket motor with jettisoned ignitor</p> <p><i>Wen-Jing Wu</i></p>
1830-2030	<p>Conference Banquet <i>Sunset Beach Resort</i></p>					

End of Day

Thursday 5/18/2023

Room	304a					
0830-0915	<p align="center"><u>Keynote Lecture VII</u> AI Driven Fuel Design Prof. Mani Sarathy <i>King Abdullah University of Science and Technology (KAUST), Saudi Arabia</i> Chair: Prof. Shou-Ying Yang (National Formosa University, Taiwan)</p>					
0915-1000	304a			Gallery		
	<p align="center">Town Hall Meeting on ISOC <i>Prof. Bassam Dally</i></p>			<p align="center">Poster Session</p>		
1000-1020	<p align="center">Coffee Break</p>					
Room	304a	303a	303b	302a	302b	303e
	<p align="center">Turbulent Ammonia Flames <i>Namil Kim</i></p>	<p align="center">Kinetics - UQ and Model Analysis <i>Lin Ji / Je Ir Ryu</i></p>	<p align="center">Spray Simulations <i>Chien-Chou Tseng</i></p>	<p align="center">Solid Fuel II <i>Sheng-Yen Hsu</i></p>	<p align="center">Fire IV <i>Yu Wang / Chia Lung Wu</i></p>	<p align="center">Soot <i>Mani Sarathy</i></p>
1020-1040	<p>165 Large eddy simulations of hydrogen/ammonia bluff-body flames <i>Suliman Abdelwahid, FranciscoE Hernández-Pérez, Adamu Alfazazi, Ayman Elbaz, Jiajun Li, BassamDally, Hong G Im</i></p>	<p>138 Assessing the performance of multi-component surrogates in replicating combustion characteristics of gasoline fuel. <i>Inna Gorbatenko, Abdullah S AlRamadan, Yohan Chi, Donghee Han, Junseok Chang, S Mani Sarathy</i></p>	<p>362 Volume-of-fluid simulations of spray injection in a coaxial air-blast atomizer <i>Po-Han Chen, Alberto Ceschin, Francisco Hernandez Pérez, Hong G Im</i></p>	<p>70 A study of co-gasification of shiitake substrate and PE using ASPEN Plus <i>Yun-Ting Hsu, Guan-Bang Chen, Fang-Hsien Wu, Ta-Hui Lin</i></p>	<p>295 Full-scale tank fires suppression by using combined system of foam and perlites <i>Shu-Hsuan Wu, Tzu-Yan Tseng, Kuang-Chung Tsai</i></p>	<p>320 Two-dimensional simulation of turbulent soot flames using a two-equation model and various reaction mechanisms <i>Shion Ando, So Shimamura, Osamu Morieue</i></p>

Thursday 5/18/2023

Room	304a	303a	303b	302a	302b	303e
1040-1100	<p>255 Global quench of centrally-ignited premixed ammonia/air flames by turbulence</p> <p><i>Yi-Rong Chen, Tinh Van Mai, Hao Yu Hsieh, Shengyang S Shy</i></p>	<p>347 A multi stage kinetic reaction optimization strategy applied to n-heptane combustion mechanism</p> <p><i>Krunal R Panchal, Vaisakh Vasudaven, Krithika Narayanaswamy</i></p>	<p>79 A volume of fluid approach to model vacuum residue injection in an entrained flow gasifier</p> <p><i>Alberto Ceschin, Francisco Hernandez Pérez, Hong G Im</i></p>	<p>74 A study of waste shiitake substrate co-gasification with waste polyethylene</p> <p><i>Chung Yu Chang, Guan-Bang Chen, Fang-Hsien Wu, Fu-Yuan Yuan</i></p>	<p>374 Thermal performance of fire blankets for protection against WUI fires</p> <p><i>Robin Neupane, Ankit Sharma, Jonathan Fu, Ya-Ting T Liao, Fumiaki Takahashi</i></p>	<p>72 Effect of ammonia enriched gaseous co-flow on soot formation in droplet combustion</p> <p><i>Atul Kumar, Shouyin Yang</i></p>
1100-1120	<p>380 Lift-off and stabilization characteristics of turbulent autoigniting partially premixed NH₃+H₂ flames</p> <p><i>Matthew J Dunn, Andrew MacFarlane, Assaad Masri</i></p>	<p>203 Multi-fidelity neural network-based surrogate model for uncertainty quantification of combustion kinetic models</p> <p><i>Chengcheng Liu, Keli Lin, Yiru Wang, Bin Yang</i></p>	<p>118 Numerical simulation of a non-reacting air-blast ethanol spray using explicit volume diffusion method</p> <p><i>Jiayue Yu, Sebastian Galindo-Lopez, Matthew Cleary, Agisilaos Kourmatzis, Bosen Wang</i></p>	<p>66 Investigation on Pd/C catalyzed hydrogenolysis of lignin and its model compound via flow-through reactor coupling ultra-high resolution mass spectrometry</p> <p><i>Linyu Zhu, Cunhao Cui, Jing Zhang, Xintong Xiao, Haoran Liu, Zhongyue Zhou, Fei Qi</i></p>	<p>237 Substitutability of core materials for fire doors</p> <p><i>Che-Ming Hsu</i></p>	<p>176 The effects of NH₃ addition on the morphology and nanostructure of soot particles in laminar diffusion n-decane flames</p> <p><i>Zhiyu Yan, Tianyi Zhu, Qianqian Li, Zuohua Huang</i></p>
1120-1140	<p>34 Large eddy simulation of ammonia-methane premixed turbulent flames with different wall temperature conditions</p> <p><i>Cheng Kang, Ping Wang, Yongqian Wang, Qian jia, Yang Chun, Antonio Ferrante, Chen Min, Liu Feng, Roy Subhajit</i></p>	<p>249 On the solution of stiff odes with different initial conditions by Fourier neural operator</p> <p><i>Yuting Weng, Dezhi Zhou</i></p>	<p>187 Numerical study of the unsteady drag on a droplet accelerated by a uniform gas flow</p> <p><i>Ying Zhang, Yongjie Chen, Yai Bai, Chunchun Chu, Fei Qi, Xi Xia</i></p>	<p>305 Minimum oxidizer supply of smouldering combustion in biomass fuels</p> <p><i>Yunzhu Qin, Yuying Chen, Shaorun Lin, Xinyan Huang</i></p>	<p>302 Numerical simulation of smoke flow in ship fire under pendulum-like motions</p> <p><i>Arata Kimura, Hideyuki Oka, Yasushi Oka</i></p>	<p>102 Uncertainty analysis of soot formation in a burner stabilized stagnation flame</p> <p><i>Xingyu Su, Matthew Cleary, Hua Zhou, Zhuyin Ren, Assaad Masri</i></p>

Thursday 5/18/2023

Room	304a	303a	303b	302a	302b	303e
1140-1200	32 NO emission characteristics of turbulent premixed ammonia-methane flames in a swirl combustor <i>Yongqian Wang, Ping Wang, Cheng Kang, Weijia Qian, Zhengchun Yang, Wenfeng Liu, Mingmin Chen, Ferrante Antonio</i>	145 Exemplar-based clustering algorithms for experimental datasets based on affinity propagation and global sensitivity analysis <i>Yiru Wang, Zijun Zhou, Keli Lin, Chenyue Tao, Chung K Law, Bin Yang</i>	230 A quasi-continuous description of activity coefficients applicable for preferential vaporization of complex liquid fuels <i>Yuhang Sun, Yu Cheng Liu</i>		330 Flow field characterization of a flickering buoyant jet diffusion flame <i>Haodong Zhang, Yifan Yang, Linye Li, Mingming Gu, Xi Xia</i>	190 Reactive inception model for soot modeling in laminar inverse diffusion flames <i>Junjun Guo, Peng Liu, Erica Quadarella, William Roberts, Hong G Im</i>
1200-1320	304b					
	Lunch					
Room	304a	303a	303b	302a	302b	303e
	Turbulent Hydrogen Flames II <i>Donghyuk Shin</i>	Kinetics - Ammonia <i>Yingjia Zhang / Wai Siong Chai</i>	Droplet Phenomena <i>Tiegang Fang</i>	Diagnostics II <i>Matthew Dunn</i>	Fire V <i>Yu Wang / Chia Lung Wu</i>	Energetic Materials II <i>Juyoung Oh</i>
1320-1340	191 Flame-flow dynamic behavior at mode transition during combustion instability in lean premixed low-swirl hydrogen-methane turbulent flames <i>Takeshi Shoji, Ryota Fujii, Judai Masugi, Kentaro Horikawa, Shigeru Tachibana, Takeshi Yokomori</i>	13 Numerical investigation and adjustment on the ignition delay mechanisms of ammonia-based fuels <i>Wai Siong Chai, Lei Zhou</i>	150 Effect of ultrafine oxygen bubbles on spray combustion <i>Naoki Hayashi, Yusei Akai, Kazuhiro Yamamoto</i>	113 Characteristics of laser-induced breakdown plasma as a combustion diagnostic tool and an ignition source under various density conditions <i>Jieun Kang, Seongkyun Im</i>	282 The effect of immersed metal objects on burning rate of in-situ burning <i>Jun Jia Ye, Tzu Yan Tseng, Kuang-Chung Tsai</i>	251 The experimental analysis of the burning characteristics of electrically controlled solid propellant <i>Daehong Lim, Gnanaprakash Kanagaraj, Rajendra Rajak, Jack J Yoh</i>

Thursday 5/18/2023

Room	304a	303a	303b	302a	302b	303e
1340-1400	<p>114 Effects of the coaxial air on flame stabilization of methane/hydrogen non-premixed flames under elevated pressures</p> <p><i>Jiseop Lee, Nam Il Kim</i></p>	<p>126 Kinetic study on ammonia oxidation at fuel-rich conditions with H₂O addition using a micro flow reactor with a controlled temperature profile</p> <p><i>Kenta Tamaoki, Yuki Murakami, Keisuke Kanayama, Takuya Tezuka, Hisashi Nakamura</i></p>	<p>137 Spray characteristics of hydro-processed renewable diesel on constant volume combustion chamber</p> <p><i>Warit Abi Nurazaq, Wei-Cheng Wang, Cho-Yu Lee, Manida Tongroon</i></p>	<p>351 Effects of oxygen concentration of oxygen enriched CH₄/O₂/N₂ flames in temperature measurements using LITGS at 1.0 MPa</p> <p><i>Hiromi Kondo, Yuta Mizuno, Taku Kudo, Akihiro Hayakawa</i></p>	<p>146 Characteristics of fuel vaporization, combustion and flows of air, fuel vapor and liquid during ethanol-pool fire</p> <p><i>Kenshin Kobayashi</i></p>	<p>51 Effect of copper chromite on ammonium perchlorate decomposition - a TGA-FTIR-MS study</p> <p><i>Shani Saha, Arindrajit Chowdhury, Neeraj R Kumbhakarna</i></p>
1400-1420	<p>183 Large-eddy simulation of a natural gas DISI engine: effects of laminar and turbulent flame speed modelling</p> <p><i>Mohammadreza Yosri, Mohsen Talei, Robert Gordon, Michael Brear</i></p>	<p>46 Analysis of dominant reaction mechanism of unstable combustion behavior of ammonia/hydrogen blending system</p> <p><i>Mengze Ai, Shengyao Liang, Lin Ji, Dan Zhao</i></p>	<p>179 Experimental study of droplet collision under weak air crossflow</p> <p><i>Yai Bai, Yongjie Chen, Dawei Zhang, Chunchun Chu, Ying Zhang, Fei Qi, Xi Xia</i></p>	<p>129 Equivalence ratio measurement by LIBS in double hydrogen jets at gasoline engine-like conditions</p> <p><i>Jungho Justin Kim, Seong-Young Lee, Sang Uk Lee, Choongsik Bae</i></p>	<p>22 A pilot research of re-defining what is 'flashover'</p> <p><i>Han Shun Hsu, Ricky Carvel, Chia Lung Wu</i></p>	<p>162 Hygrothermal aging of magnesium particles and performance of metal-fluorocarbon pyrolants</p> <p><i>Juyoung Oh, Yejun Lee, Jack J Yoh</i></p>
1420-1440	<p>267 Study on combustion characteristics in steam-diluted hydrogen/oxygen multi-cluster burner using PSR and LES</p> <p><i>Shan Jiang, Masayasu Shimura, Mamoru Tanahashi</i></p>	<p>117 Experimental and kinetic studies of N₂O in elevated pressure ammonia oxidation</p> <p><i>Haochen Zhan, Shuming Li, Geyuan Yin, Erjiang Hu, ZuohuaHuan</i></p>	<p>181 Breakup and lifting of a falling droplet in air crossflow</p> <p><i>Chunchun Chu, Yongjie chen, Yai Bai, Ying Zhang, Fei Qi, Xi Xia</i></p>	<p>238 Temperature measurement in laminar flames by oh thermally assisted lif method based on a single broadband femtosecond laser</p> <p><i>Sibo Huang, Mamoru Tanahashi, Masayasu Shimura</i></p>	<p>354 Oxygen and pressure effects on the ignition of polymer-insulated wire with short-term excess current in microgravity: a numerical study</p> <p><i>Feng Guo, Nozomu Hashimoto, Osamu Fujita</i></p>	<p>332 Experimental and theoretical study on the ignition process of boron particle</p> <p><i>Ying Feng, Yong Tang, Wei Dong, Xie Dingjiang, Majie Zhao, Baolu Shi</i></p>

Thursday 5/18/2023

Room	304a	303a	303b	302a	302b	303e
1440-1500	116 Experimental and numerical study on stratified combustion with hydrogen enrichment <i>Ruihan Ge, Erjiang Hu, Xin Lv, Chenglong Tang, Zuohua Huang</i>	180 Kinetic study of plasma-assisted low-temperature oxidation of ammonia <i>Haodong Chen, Zhongkai Liu, Zhaoying Li, Bin Yang</i>	148 Numerical investigation on binary droplet bouncing in gaseous crossflow <i>Yongjie Chen, Ying Zhang, Yai Bai, Chunchun Chu, Fei Qi, Xi Xia</i>	201 A temporally-resolved energy deposition behavior analysis on the creation of laser-induced plasmas in combustion environments <i>Shu Chai, Haimeng Peng, Wendong Wu</i>	254 Influence of wind speeds and heating exposures on the thermal insulation of intumescent fire-retardant coatings <i>Saiya Feng, Yuhao Li, Zhengyang Wang, Chuangang Fan, Liang Yi</i>	
1500-1520	Coffee Break					
	Laminar Low Carbon Fuel Flames <i>Daisuke Shimokuri</i>	Electric Assisted & Catalytic Combustion <i>Ying-Hao Liao</i>	Gas Turbines III <i>Kuo-Long Pan</i>	Diagnostics III <i>Matthew Dunn</i>	Internal Combustion Engines III <i>Haifeng Liu / Sheng-Lun Lin</i>	New Concepts <i>Jiun-Ming Li</i>
1520-1540	21 General correlation of laminar burning velocities for multicomponent syngas (H ₂ /CO/CH ₄)/air mixtures <i>Tien Minh Nguyen, Le Chau Thanh Nguyen, Tan Thong Ngo, Phu Nguu Do, Duy Quoc Tong, Phuoc Dinh Tran</i>	317 Effects of the DC electric field on a premixed flat flame formed in an impinging flow <i>Akira Shioyoke, Yuki Fujita, Hiroshi Kawanabe, Jun Hayashi</i>	63 Experimental investigation of the global characteristics of ammonia spray <i>Santiago Cardona Vargas, Felipe Campuzano Diosa, William Roberts, Thibault Guiberti</i>	204 Machine learning-based prediction of global equivalence ratio from absorption spectra on a swirl combustor <i>Cheolwoo Bong, Moon Soo Bak, Yongjun Kwon</i>	43 A preliminary study on thermal - mechanical stress of a piston in a heavy-duty diesel engine operating under warming-up conditions. <i>Nguyen Van Duong, Phuong X Pham</i>	108 Bilger's zero release combustion technology as energy storage <i>Alex Klimenko</i>
1540-1600	110 Effects of hydrogen addition to CH ₄ /C ₃ H ₈ on premixed flame propagation in a narrow-gap disk burner <i>Nam Il Kim, Sang Min Lee</i>	77 Propagation of nonpremixed methane-air lifted flame in the parallel electric field <i>Jinwoo Son, Min Suk Cha, Sunho Park</i>	184 Towards the development of liquid ammonia/air spray combustion in a gas turbine-like combustor <i>KDKA Somarathne, H Yamashita, S Colson, A Hayakawa, T Kudo, H Kobayashi</i>	231 The effects of diluents addition on the OH and PAH formation in inverse-coflow laminar diffusion flames <i>Raul A Serrano Bayona, Peng Liu, Et-touhami Essebbbar, William Roberts</i>	93 Highlights on the mechanism of jet development, flame propagation, and combustion regime in a pre-chamber engine <i>Mickael Silva</i>	301 Characterization of latent heat recovery and SO _x reduction of flue gas based on the novel FGC system <i>HyeonRok Choi, Won Yang, YongWoon Lee, Changkook Ryu</i>

Thursday 5/18/2023

Room	304a	303a	303b	302a	302b	303e
1600-1620	12 Numerical study of ammonia-hydrogen premixed ball-like flame <i>Wai Siong Chai, Lei Zhou</i>	88 A computational study of a laminar methane-air flame assisted by nanosecond repetitively pulsed discharges <i>Xiao Shao, Narjisse Kabbaj, Deanna Lacoste, Hong G Im</i>	303 Ignition, spray, and flow characteristics of a five-injector model combustor <i>Bowen Yu, Dewen Liu, Linye Li, Tao Chen, Liangliang Xu, Xi Xia, Fei Qi</i>	28 Learning combustion state classification from very few IR images using Siamese networks and k nearest neighbors <i>Kang Ruiyuan, Panos Liatsis, Dimitrios C Kyritsis</i>	212 Parametric analysis on ignition assistance by a shielded hot surface under aircraft compression ignition engine conditions <i>Sayop Kim, Je Ir Ryu, Austen Motily, Tonghun Lee, Kenneth S Kim, Chol-Bum M Kweon</i>	299 Evaluation of optimal operation based on the utilization of renewable energy in smart farm <i>Jiseon Park, Won Yang, Yongwoon Lee, Jongsup Hong</i>
1620-1640	120 Effect of H ₂ addition on laminar burning velocity of NH ₃ /DME blends by experiments and a reduced mechanism <i>Huizhen Li, Huahua Xiao</i>	90 Elucidating the mechanism for the oxidative coupling of methane catalyzed by La ₂ O ₃ : experimental and microkinetic modeling studies <i>Zaili Xiong, Jijun Guo, Yuwen Deng, Bingzhi Liu, Hao Lou, Meirong Zeng, Zhandong Wang, Zhongyue Zhou, Wenhao Yuan, Fei Qi</i>		377 Laser absorption diagnostics of OH concentration time-histories during dimethyl ether (DME) oxidation <i>Xin Zhang, Zilong Feng, Yufan Zhang, Zuohua Huang, Yingjia Zhang</i>	38 Effects of Miller cycle combined with supercharging on the performance of a kerosene-fueled pre-chamber jet ignition engine <i>Fengnian Liu, Lei Zhou, Zongkuan Liu, Changwen Liu, Haiqiao Wei</i>	376 Further insights into the cascade utilization of chemical energy <i>Honghuan Wu, Qian Zhao, Wenlin Huang, Wuchuan Sun, Zuohua Huang, Yingjia Zhang</i>
1645-1830	Farewell Party <i>Kaohsiung Exhibition Center Outdoor Lawn</i>					

End of Day