

Draft Program of the 3rd Symposium on Ammonia Energy

Monday, 23 September 2024

	<p>Monday, 23 September 2024</p>
8:30	<p>Opening Ceremony for the Industry Workshop Chair: Yuyang Li</p>
9:00	<p>Plenary Lecture Ammonia combustion for manufacturing of ceramic tiles <i>Yibing Cheng, Chuyun Zhang</i> Chair: Agustin Valera Medina</p>
9:40	<p>Plenary Lecture Ammonia cracking: Catalyst developments, reactor innovation and system integration <i>Ning Yan, Sundar Chidambaram</i> Chair: Agustin Valera Medina</p>
10:20	<p>Coffee Break (30 minutes)</p>
10:50	<p>Round-Table Discussion Chair: Katharina Kohse-Höinghaus</p>
12:00	<p>LUNCH (90 Minutes)</p>

Room	ROOM 1	ROOM 2		ROOM 3		ROOM 4	
	Production and Materials	Internal Combustion Engines		Gas Turbines and Jet Engines		Boilers and Thermal Systems	
13:30	Keynote Lecture Energy storage and power generation via ammonia-hydrogen conversion technologies <i>Lilong Jiang</i>	13:30	Keynote Lecture Ammonia-hydrogen in lean burn spark ignition engines: Advancing zero-carbon transport and power generation <i>Alasdair Cairns, Sikai Geng</i>	13:30	Keynote Lecture Decarbonization of gas turbine through hydrogen and ammonia: Status and strategies in combustion research <i>Yuyang Li, Ghenadie Bulat</i>	13:30	Keynote Lecture Demonstrative studies of ammonia co-firing to coal power plants in Korea: Current status and plans <i>Suyul Chung, Won Yang</i>
14:00	Invited Lecture KIER's challenges to develop a low-temperature and low-pressure ammonia synthesis catalyst <i>Kyungho Lee</i>	14:00	Invited Lecture Internal combustion engine powered by ammonia: From Laboratory to industry applications <i>Longwei Chen, Liang Chen</i>	14:00	Invited Lecture Combustion optimization and burnout of ammonia-based gaseous fuels in the constant pressure sequential combustion system operated in rich-dilute-lean mode <i>Tay Wo Chong Hilares Luis, Andrea Gruber</i>	14:00	Invited Lecture Recent advancement of ammonia-coal cofiring technology – from laboratory experiments to full scale boiler testing <i>Heyang Wang, Tao Niu</i>
14:20	Invited Lecture From carbon-free energy to carbon-free power: Building on existing global infrastructures <i>Bill David</i>	14:20	Invited Lecture Improvement of ammonia engine ignition by reactive molecules <i>Christine Rousselle, Richard Samson</i>	14:20	Invited Lecture Behaviour of retrofitted industrial gas turbine burners to ammonia blends <i>Mario Ditaranto</i>	14:20	Invited Lecture Flame structure and emission characteristics under pulverized coal-ammonia co-firing conditions <i>Hookyung Lee</i>
14:40	Coffee Break (30 minutes)						

15:10	Invited Lecture Mild ammonia synthesis technologies to store hydrogen for renewable electricity consumption <i>He Lin, Yinghong Lin</i>	15:10	Keynote Lecture Discussion and engineering practice of combustion mode for IC engines fueled with ammonia <i>Mingfa Yao, Zhaohui Wu</i>	15:10	Keynote Lecture Ammonia combustion study and demonstration of ammonia gas turbine <i>Akihiro Hayakawa, Norihiko Iki</i>	15:10	Keynote Lecture AMBURN – ammonia for LPG replacement in medium size boilers <i>Agustin Valera Medina, Ross Docherty</i>
15:30	Invited Lecture Pioneering sustainable ammonia synthesis and cracking: Innovations from South Korea <i>Hyung Chul Yoon</i>	15:40	Invited Lecture Exploration of carbon-neutral solutions for heavy commercial vehicles – Ammonia-hydrogen combined zero-carbon high power internal combustion engine research and development <i>Hai'e Chen, Changcheng Liu</i>	15:40	Invited Lecture Retrofitting a micro gas turbine for operation with green fuels (NH ₃ /H ₂ /MeOH) produced in the kingdom of Saudi Arabia <i>Thibault Guiberti, Mani Sarathy</i>	15:40	Invited Lecture Research progress and prospects of ammonia combustion in coal-fired power plants under the background of carbon peak and carbon neutrality <i>Xiaowei Liu, Hansheng Feng</i>
15:50	Parallel Sessions Discussion	16:00	Invited Lecture TBD <i>Peter de Vos</i>	16:00	Invited Lecture Combustion of ammonia/hydrogen mixtures in gas turbine combustors: first tests and CFD modelling for NOx emissions prediction <i>Luca Mazzotta</i>	16:00	Invited Lecture Ammonia cofiring potentials and challenges: Research testing case study <i>Suzana binti Yusup</i>
		16:20	Parallel Sessions Discussion	16:20	Parallel Sessions Discussion	16:20	Parallel Sessions Discussion
17:30	Welcome Reception						
20:00	Warm-up Seminar for Young Scholars and Students Chairs: Katharina Kohse-Höinghaus and Wei Li						

Tuesday, 24 September 2024

8:00	<p>Opening Ceremony Chair: Yuyang Li</p>
8:45	<p>Plenary Lecture Progress in catalysts for green NH₃ synthesis: What we learned from the past decade <i>Hideo Hosono</i> Chair: Katharina Kohse-Höinghaus</p>
9:30	<p>Plenary Lecture Ammonia direct combustion – General features and applications <i>Hideaki Kobayashi</i> Chair: Katharina Kohse-Höinghaus</p>
10:15	<p>Coffee Break (20 minutes)</p>
10:35	<p>Plenary Lecture New routes of ammonia synthesis and decomposition <i>Ib Chorkendorff</i> Chair: Yibing Cheng</p>
11:20	<p>Plenary Lecture Efficient direct ammonia fuel cells for transport applications <i>Shanwen Tao</i> Chair: Yibing Cheng</p>
12:05	<p>LUNCH (75 Minutes)</p>

Room	ROOM 1	ROOM 2	ROOM 3	ROOM 4	ROOM 5	ROOM 6	ROOM 7
	CHEMICAL REACTION Combustion Reaction Kinetics I	PRODUCTION AND MATERIALS Thermochemical Synthesis	GAS TURBINES Gas Turbine Applications	THERMAL APPLICATIONS Boiler and Furnace Applications	PRODUCTION AND MATERIALS Ammonia Cracking I	INTERNAL COMBUSTION ENGINES CI Engine Applications	COMBUSTION FUNDAMENTALS Laminar Flame Speed
13:20	Keynote Lecture (13:20-13:55) Some (almost) unique issues of ammonia combustion <i>María U. Alzueta</i>	Transition metal-free catalysts for low-temperature N ₂ activation <i>Zhujun Zhang, Masaaki Kitano, Hideo Hosono</i>	Towards efficient/low emission NH ₃ swirl combustion under axial staged regime through oxygen enrichment <i>Zundi Liu, Sibohan, Wei Li, Yuyang Li</i>	Study on the stability of jet flames in ammonia-coal co-firing with different configurations <i>Qiang Yao, Dezheng Li, Yang Zhang, Hai Zhang</i>	Kinetic investigation of ammonia decomposition system for hydrogen production on Pt(111) surface <i>Caiyu Yang, Weihang Jia, Lijun Yang, Chongwen Zhou</i>	Experimental investigation of two-stroke ammonia engine at medium and low load <i>Zhuohan Sun, Zhenxian Zhang, Pengbo Dong, Qingyang Wang, Wuqiang Long</i>	Laminar burning velocities of rich NH ₃ +N ₂ +O ₂ flames: Comparing the effects of elevated temperatures and oxygen ratios on model validation <i>Xinlu Han, Fawei Lin, Dingkun Yuan</i>
13:40		The promoting effect of bulk Cs ⁺ over Cs _{0.68} T _{11.83} O ₄ for ammonia synthesis <i>Ya Tang, Wenqian Chen</i>	Exploring the effect of ammonia enrichment on longitudinal thermoacoustic instability in an annular combustor <i>Chunyu Liu, Haojie Yang, Liang Yu, Xingcai Lu</i>	Experimental study on the effects of ammonia ratio and excess air coefficient on the generation characteristics of gaseous pollutants in coal-ammonia combustion <i>Le Lei, Xiaowei Liu</i>	Catalytic ammonia cracking using Ni-based catalysts supported on microchannel structured porous alumina <i>Siqi Wang, Ziqi Shen, Jiaojiao Zheng, Zhentao Wu, Mingming Zhu</i>	Experimental investigation of NH ₃ /DME HCCI combustion <i>Ganesh Duraisamy, Christine Mounaïm-Rousselle</i>	Laminar flame speed of NH ₃ /DME blends with H ₂ addition under elevated pressures <i>Huizhen Li, Huahua Xiao, Pavel N. Krivosheyev</i>

14:00	<p>Invited Lecture (13:55-14:20)</p> <p>Pushing the Boundaries of Ammonia Kinetics: Challenges for the Near Future</p> <p><i>Alessandro Stagni</i></p>	<p>Keynote Lecture (14:00-14:35)</p> <p>Hydrides catalyze ammonia synthesis and decomposition</p> <p><i>Ping Chen</i></p>	<p>Radiative characteristics of NH₃/air, NH₃/H₂/air and cracked NH₃/air premixed swirling flames</p> <p><i>Daisuke Sato, Jordan Davies, Syed Mashruk, Agustin Valera-Medina, Ryoichi Kurose</i></p>	<p>Numerical study on combustion characteristics and NO_x emissions of natural gas/ammonia semi-industrial MILD combustion</p> <p><i>Lingbo Xu, Yanfei Du, Zhou Yu, Yibing Cheng, Yu Wang</i></p>	<p>Exploring compositional heterogeneity in lithium imide ammonia cracking catalysts</p> <p><i>C. Brooker-Davis, J.W. Makepeace, T. Araki, J.P. Lowen, T.J. Wood, F. Abi-Ghaida</i></p>	<p>Effect of pre-chamber geometry on ammonia pre-chamber combustion characteristic</p> <p><i>Jiuling Sun, Qinglong Tang, Hailong Ma, Linhui Huang, Mingsheng Wen, Xuze Zhu, Haifeng Liu, Mingfa Yao</i></p>	<p>A kinetic study on the effect of ammonia addition on the laminar burning velocity of n-dodecane/air flames</p> <p><i>Danan Chen, Junqing Zhang, Jun Li, Xing Li, Hongyu Huang, Noriyuki Kobayashi, Agustin Valera-Medina</i></p>
14:20	<p>A detailed kinetic modeling study of aromatics and soot reduction in ammonia-doped hydrocarbon flames</p> <p><i>Qi Wang, Junjun Guo, Sirio Brunialti, Peng Liu, Hong G. Im, S. Mani Sarathy</i></p>		<p>Keynote Lecture (14:20-14:55)</p> <p>Ammonia combustion towards the decarbonization in power devices: From fundamental understanding to model gas turbine combustors</p> <p><i>Zuohua Huang</i></p>	<p>Fundamental study on the co-firing flame characteristics of pulverized coal particles with ammonia and hydrogen</p> <p><i>Jinheon Choi, Dong Myung Seo, Tae-Young Mun, Hookyung Lee</i></p>	<p>Metal-Organic framework-derived FeNi@NC catalyst for highly efficient hydrogen generation via ammonia decomposition</p> <p><i>Ruhao Hu, Yanping Yuan, Wenbo Wang, Anru Yan, Zhiyong Wang</i></p>	<p>Combustion and emissions of a diesel-ignition natural gas/ammonia blended fuel engine</p> <p><i>Qingyang Ma, Jiayong Wang, Minshuo Shi, Chaojie Jia, Binyang Wu, Wanhua Su</i></p>	<p>Study on flame propagation and pollutant formation characteristics of ammonia/air laminar flame at elevated temperature and pressure conditions</p> <p><i>Yi Zhang, Jun Fang, Xiaoxiang Shi, Zundi Liu, Qilong Fang, Wei Li, Yuyang Li</i></p>

14:40	<p>A compact kinetic reaction mechanism for the oxidation of NH₃/H₂ mixtures</p> <p><i>Ali Alnasif, András György Szanthoffer, Máté Papp, Tamás Turányi, Syed Mashruk, Agustin Valera-Medina, Tibor Nagy</i></p>	<p>Invited Lecture (14:35-15:00)</p> <p>Dealing with electrons and hydrogen: Novel catalyst materials for ammonia synthesis</p> <p><i>Yoji Kobayashi</i></p>		<p>Large-eddy simulation of ammonia/coal co-combustion in a laboratory-scale burner using an extended flamelet/progress variable (FPV) model</p> <p><i>Qingqing Xue, Jiangkuan Xing, Xinzhou Tang, Kun Luo, Jianren Fan</i></p>	<p>MgAl-LDH derived oxides supported Ni as a catalyst for ammonia decomposition</p> <p><i>Wenjun Zhu, Yudi Yan, Changhai Liang</i></p>	<p>Numerical simulation on enhanced combustion characteristics of lean ammonia/air by pre-chamber jet flame ignition strategy in a medium-speed marine engine</p> <p><i>Xinru Shi, Qian Xiong, Xinying Yi, Keli Zhao, Long Liu, Jianhui Zhao</i></p>	<p>Thermodynamic and kinetic examination of laminar burning velocity for syngas/ammonia mixtures</p> <p><i>Mehrdad Kiani, Mehdi Ashjaee, Ehsan Houshfar</i></p>
15:00	<p>Chemical Kinetics of nitrogenous exhaust combustion</p> <p><i>Silu Xue, Yu Yang, Wang Han, Bingtao An, Jing Liu, Lijun Yang</i></p>	<p>Microscopic scaling relation of Ti-based catalysts in de/hydrogenation reactions of Mg/MgH₂</p> <p><i>Yangfan Lu</i></p>	<p>Invited Lecture (14:55-15:20)</p> <p>Towards the development of liquid ammonia-fueled low NO_x gas turbine systems</p> <p><i>K.D. Kunkuma A. Somarathne</i></p>	<p>Carbon-free power generation strategy in South Korea: Effects of ammonia ratio and air-staging conditions in a tangentially fired boiler</p> <p><i>Yijie Zeng, Byoung-Hwa Lee, Chung-Hwan Jeon</i></p>	<p>Kinetic investigation of ammonia decomposition system for hydrogen production on Ni(111) and Co(111) surfaces</p> <p><i>Weihang Jia, Caiyu Yang, Lijun Yang, Chongwen Zhou</i></p>	<p>Study of H₂ turbulence jets ignited NH₃-H₂ combined lean combustion in a marine engine for high thermal efficiency</p> <p><i>Zhichao Hu, Yanzhao An, Yiqiang Pei, Junnan Hu, Zhanwang Su</i></p>	<p>Experimental study on laminar flame speed of NH₃/O₂/N₂ mixtures from ultra-lean to ultra-rich conditions</p> <p><i>Jun Fang, Yi Zhang, Songlin Liu, Wei Li, Yuyang Li</i></p>
15:20	Coffee Break (20 minutes)						

Room	ROOM 1	ROOM 2	ROOM 3	ROOM 4	ROOM 5	ROOM 6	ROOM 7
	PRODUCTION AND MATERIALS Thermochemical Synthesis	COMBUSTION FUNDAMENTALS Combustion Diagnostics	THERMAL APPLICATIONS Thermal Applications	INTERNAL COMBUSTION ENGINES SI Engine Applications I	COMBUSTION FUNDAMENTALS NO _x Formation and Control I	INTERNAL COMBUSTION ENGINES Spray Combustion	ENVIRONMENTAL, LCA, TEA LCA and TEA Analysis
15:40	Keynote Lecture (15:40-16:15) Bimetallic active sites synergistically promote thermochemical synthesis of ammonia <i>Jun Cheng</i>	Evolution of charged species in NH ₃ /H ₂ /O ₂ /AR flames <i>Andrei Cherepanov, Denis Knyazkov, Ksenia Osipova, Vitaly Kisilev, Artem Dmitriev, Andrei Shmakov</i>	Understanding the fundamental aspects of premixed ammonia-hydrogen/air flames via chemiluminescence <i>Alka Karan, Guillaume Dayma, Christian Chauveau, Fabien Halter</i>	Combustion and emissions of an ammonia-gasoline dual-fuel spark ignition engine <i>Ying Ding, Genglong Pan, Dong Han, Zhen Huang</i>	Thermal and fuel NO mechanisms of pure ammonia flame under various combustion regimes <i>Xiangtao Liu, Jicang Si, Jianchun Mi</i>	Investigating injection dynamics of ammonia, LPG and propane: A study on marine fuel alternatives <i>Fahad Almatrafi, Kaushik Nonavinakere Vinod, Hao Wu, Moez Ben Houidi, Tiegang Fang, William L. Roberts</i>	Techno-economic assessment of a decentralized system for pure hydrogen production via green ammonia decomposition <i>Valentina Cechetto, Fausto Gallucci</i>
16:00		Calibration-free measurement of NO in laminar ammonia flames: Spatially resolved and NO oxidation analysis <i>Qing Li, Liuha Ma, Jianguo Du, Yu Wang</i>	Flame structures and emissions in ammonia/n-heptane combustion under RCCI conditions <i>Yuchen Zhou, Shijie Xu, Leilei Xu, Xue-Song Bai</i>	Study on the influence of injection mode on ammonia/diesel dual-fuel low-speed engine <i>Tengda Song, Haifeng Liu, Mingfa Yao</i>	Influence of ammonia cofiring ratio and injection mode on the NO _x control mechanisms of NH ₃ /CH ₄ cofiring <i>Yan Xie, Xin Liu, Wenzhen Zhang, Jun Li, Heyang Wang</i>	The diffusion combustion characteristics and pollutant generation mechanism of liquid ammonia <i>Weize Chen, Zhenxian Zhang, Jingchen Cui, Pengbo Dong, Wuqiang Long</i>	Techno-economic assessment for renewable ammonia production from sewage <i>Asifa Anwar, Safa Yaser Talal Al Khalil, Mohammad N.A. Alherbawi, Yusuf Bicer</i>

16:20	<p>Invited Lecture (16:15-16:40)</p> <p>Vacancies boost nitrogen activation for ammonia synthesis</p> <p><i>Tian-nan Ye</i></p>	<p>Keynote Lecture (16:20-16:55)</p> <p>Unraveling ammonia combustion with laser diagnostics</p> <p><i>Christian Brackmann</i></p>	<p>Numerical study of in-situ SNCR reaction induction and optimization with ammonia injection into the combustion zone</p> <p><i>Jonghyun Kim, Minhyoek Kim, Jungsoo Park</i></p>	<p>Characteristics of sparked-spray induced combustion fueled with methanol/ammonia</p> <p><i>Zikang Wang, Minglong Li, Zongjie Hu, Liguang Li</i></p>	<p>Characterizing fuel-NO interaction in NH₃/DME co-firing: Experimental and kinetic modeling investigation</p> <p><i>Songlin Liu, Qiyang Zhang, Xiaoxiang Shi, Jun Fang, Qilong Fang, Wei Li, Yuyang Li</i></p>	<p>Numerical analysis of spray interaction and combustion in ammonia/diesel dual-fuel systems</p> <p><i>Margherita Miccio, Yuchen Zhou, Leilei Xu, Xue-Song Bai</i></p>	<p>Techno-economic optimization of ammonia synthesis system based on low temperature electrolyzers</p> <p><i>Luyao Liu, Hanfei Zhang, Yumeng Zhang, Arianna Baldinelli, Mingjia Sun, Xingheng Nian, Liqiang Duan, Umberto Desideri</i></p>
16:40	<p>Complex ruthenium hydrides catalyze ammonia synthesis</p> <p><i>Qianru Wang, Jianping Guo, Ping Chen</i></p>		<p>Keynote Lecture (16:40-17:15)</p> <p>Ammonia clean combustion promoted by NH₃/CO and catalytic reactions</p> <p><i>Xiaolin Wei</i></p>	<p>The ammonia slip – NO emission trade off in SI engines</p> <p><i>Fabian Mauss, Michal Pasternak, Reddy Siddareddy, Tim Franken</i></p>	<p>The effect of H₂O dilution on NO_x emissions from NH₃ oxidation with the addition of H₂ or CH₄</p> <p><i>Pengfei Li, Guodong Shi, Zhaohui Liu</i></p>	<p>On one-way coupled parcel spray simulation of ammonia fuel for engine applications</p> <p><i>Aman Kumar, Noah Van Dam</i></p>	<p>Analyzing risk in the hydrogen/ammonia supply chain. A mean-variance portfolio (MVP) approach</p> <p><i>Marco Jano-Ito, Agustin Valera-Medina</i></p>
17:00	<p>2D mathematical model study of a packed bed membrane reactor for ammonia synthesis: Optimization, design and scale-up</p> <p><i>I. Gargiulo, A.E. Simpelhaar, E.A.J.F. Peters, F. Gallucci</i></p>	<p>Invited Lecture (16:55-17:20)</p> <p>NO/N₂O formation characteristics in laminar premixed of ammonia-methane flames</p> <p><i>Yu Wang</i></p>	<p>Comparative kinetic analysis of the effect of EHN addition on the combustion characteristics of ammonia/diesel and methane/diesel</p> <p><i>Wenjuan Xu, Haifeng Liu, Can Wang, Weide Chang, Xinyan Wang, Hua Zhao</i></p>	<p>Characterizing DME and NO interaction in outwardly propagating spherical flame</p> <p><i>Bilal Hussain, Wei Li, Yuyang Li, Jun Fang</i></p>	<p>Comparison of evaporation model performance for simulation of ammonia sprays</p> <p><i>Daniel Bundred, Felix Leach</i></p>	<p>NH₃ value chain for green H₂ transport: A European scenario</p> <p><i>Elvira Spatolisano, Federica Restelli, Laura Annamaria Pellegrini</i></p>	

17:20	<p>A wartime catalyst for ammonia production</p> <p><i>Matthew Cummings, Thomas Wood, William David</i></p>	<p>Laser-based speciation of $\text{NH}_3/\text{N}_2\text{O}/\text{O}_2$ oxidation behind reflected shock waves</p> <p><i>Jiabiao Zou, Earnesto Thachil, Aamir Farooq</i></p>	<p>Invited Lecture (17:15-17:40)</p> <p>Effects of ammonia addition on soot formation in fuel pyrolysis</p> <p><i>Dong Liu</i></p>	<p>Knock prediction for ammonia/hydrogen SI engine</p> <p><i>Steffen Benzinger, Mikael Grill, Andre Casal Kulzer, Caneon Kurien, Florian Hurault, Fabrice Foucher, Pierre Bréquigny, Christine Mounaïm-Rousselle</i></p>	<p>Experimental and numerical studies on the NO reaction pathways of NH_3 cofiring with coal volatile matter</p> <p><i>Jingyang Han, Yan Xie, Jun Li, Xin Liu, Wenzhen Zhang, Ming Li, Tao Niu, Heyang Wang</i></p>	<p>A numerical study of a liquid ammonia jet flame with detailed reaction mechanism</p> <p><i>Zhenhua An, Jiangkuan Xing, Meng Zhang, Ryoichi Kurose</i></p>	<p>Techno-economic and environmental assessment of ammonia co-firing in coal-fired boiler power plants</p> <p><i>Keying Li, Yang Zhang, Hai Zhang</i></p>
18:45	Banquet						

Wednesday, 25 September 2024


Room	ROOM 1	ROOM 2	ROOM 3	ROOM 4	ROOM 5	ROOM 6
	INTERNAL COMBUSTION ENGINES Swirl Combustion	COMBUSTION FUNDAMENTALS Combustion Kinetics and Dynamics	PRODUCTION AND MATERIALS Catalytic Processes	THERMAL APPLICATIONS Ammonia/Coal Co-Firing	FUEL CELLS Fuel Cell Applications I	COMBUSTION FUNDAMENTALS Soot Formation and Control
8:00	Keynote Lecture (8:00-8:35) Fundamental and application research on co-combustion of ammonia and fossil fuel <i>Shuiqing Li</i>	A comprehensive modeling study of NH ₃ /DME Bunsen flames: Flame stability and NO _x formation <i>Alessandro Stagni, Luca Granata, Francesco Roman Artioli, Federica Ferraro</i>	Understanding metal-support interactions of supported CuO catalysts for ammonia catalytic combustion through Density Functional Theory calculations <i>Siqi Wang, Mingming Zhu</i>	Co-firing characteristics of up to 25% ammonia in a 0.1 MWth circulating fluidized bed combustion system <i>Hookyung Lee, Seong-Ju Kim, Sung-Jin Park, Tae-Young Mun</i>	Effect of oxygen partial pressure on direct ammonia solid oxide fuel cell performance loss characteristics at different temperatures <i>Yuchen Ya, Yishu Xu, Yimin Liu, Xiaobei Cheng</i>	Impact of ammonia addition on PAH and soot formation in 2,5-dimethylfuran counterflow diffusion flames <i>Ronghao Yu, Yishu Xu, Bowen Wang, Kai Zhang, Xiaobei Cheng</i>
8:20		Flammability limits of ammonia, and ammonia-hydrogen mixtures: Key role of radiation and chemistry <i>Francesco Roman Artioli, Alessio Frassoldati, Alessandro Stagni</i>	Theoretical design of copper-based catalysts for ammonia catalytic combustion based on mechanistic insights <i>Xue Su, Zhengqing Huang, Chunran Chang</i>	Structure and extinction characteristics of methane/ammonia/pulverized coal premixed flames <i>Dezheng Li, Qiang Yao, Keying Li, Yang Zhang, Hai Zhang, Junfu Lyu</i>	A gradient channel-width flow field for temperature uniformity enhancement in ammonia fueled SOFC <i>Rongxuan Wang, Bowen Wang, Kui Jiao</i>	An experimental and numerical study of the influence of NO addition on soot formation in C ₂ H ₄ diffusion flames <i>Kai Zhang, Yishu Xu, Ronghao Yu, Xiaobei Cheng</i>

8:40	<p>Invited Lecture (8:35-9:00)</p> <p>A strategy for ensuring flame stability and controlling nitrogen oxides in pure ammonia combustors</p> <p><i>Min Jung Lee</i></p>	<p>Keynote Lecture (8:40-9:15)</p> <p>A comprehensive kinetic study of ammonia combustion chemistry</p> <p><i>Henry Curran</i></p>	<p>Tailoring the synergistic effect between Al and Ce in Ni-based catalyst for hydrogen production from ammonia decomposition</p> <p><i>Yangfeng Li, Jie Ren, Wenshuo Zhang, Zhandong Wang</i></p>	<p>Study on NO formation characteristics and N conversion mechanism during ammonia-coal volatile co-combustion</p> <p><i>Changhao Hua, Ping Chen, Mingyan Gu, Kun Luo</i></p>	<p>Low temperature fast mixed OH⁻/H⁺ ionic conductor for direct ammonia fuel cells</p> <p><i>Peimiao Zou, Shanwen Tao</i></p>	<p>Study on soot in C₄H₁₀ combustion with H₂-NH₃ addition</p> <p><i>Yang Wang, Qianqian Liu, Zihao Ouyang, Mingyan Gu</i></p>
9:00	<p>Revealing the NO formation kinetics for NH₃/CH₄ dual-flame and premixed swirl flame under preheated air conditions</p> <p><i>Siqi Wang, Chengtung Chong</i></p>		<p>Keynote Lecture (9:00-9:35)</p> <p>Development of transition metal nitride based composite nitrogen carrier for sustainable chemical looping ammonia synthesis</p> <p><i>Rui Xiao</i></p>	<p>Experimental study on the effects of coal volatile contents on the NO_x emission characteristics of ammonia-coal cofiring</p> <p><i>X. Liu, W.Z. Zhang, G.H. Wang, Y. Xie, M. Li, T. Niu, H. Wang</i></p>	<p>Solid oxide fuel cell operating with ammonia as a fuel – air management strategy</p> <p><i>Giovanni Cinti</i></p>	<p>Experimental and modeling studies of effect of light olefins on ammonia activity and cyanides generation</p> <p><i>Shilong Li, Guang Lu, Yecheng Song, Yongdi He, Qingbo Zhu, Bin Dong, Zhandong Wang, Xingyu Liang, Kun Wang</i></p>
9:20	<p>Enhancing ammonia combustion using reactivity stratification</p> <p><i>Wenkai Liang, Chung K. Law</i></p>	<p>Invited Lecture (9:15-9:40)</p> <p>Fundamental mechanism of explosion of ammonia blends</p> <p><i>Huahua Xiao</i></p>		<p>Optimization of coal/NH₃ co-firing method in a 500 MWe tangential-firing pulverized coal boiler</p> <p><i>Yunha Koo, Woosuk Kang, Seonkyo Ha, Hyunbin Jo, Sehyeon Baek, Kyeong Il Park, Changkook Ryu</i></p>	<p>Ammonia crossover in ammonia fuel cells</p> <p><i>Zhefei Pan, Rong Chen, Liang An</i></p>	<p>Molecular dynamics simulation of soot-NO interactions in ammonia-doped ethylene combustion flames</p> <p><i>Jingyun Sun, Mingyan Gu</i></p>

9:40	Effect of flame stabilization on NO _x emissions of pressurized decomposed ammonia flames <i>Ditaranto Mario, Saanum Inge</i>	Comparison of Kinetic mechanism predictions of ignition delay time at high pressure for partially-cracked ammonia <i>Florian Hurault, Pierre Brequigny, Fabrice Foucher, Christine Mounaïm-Rousselle</i>	Invited Lecture (9:35-10:00) Electron-deficient electriles: A promising class of catalyst materials for ammonia energy application <i>Junjie Wang</i>	Combustion characteristics of heterogeneous reacting flows in ammonia co-firing conditions with pulverized coal particles <i>Hookyung Lee, Taesong Lee, Dong Myung Seo, Yongjin Jung</i>	On applicability of multiphysics models of hydrogen SOFC for ammonia SOFC <i>Brayn Díaz, Diego Celentano, Paulo Molina, Mamie Sancy, Loreto Troncoso, Magdalena Walczak</i>	Neural network potential-based molecular investigation of soot reduction mechanisms of ethylene-ammonia co-firing <i>Zhihao Xing, Rodolfo S. M. Freitas, Xi Jiang</i>
10:00	Coffee Break (30 minutes) Visit the Work-in-Progress Posters					
Room	ROOM 1	ROOM 2	ROOM 3	ROOM 4	ROOM 5	ROOM 6
	PRODUCTION AND MATERIALS Plasma-Assisted Synthesis and Cracking	PRODUCTION AND MATERIALS Mild Synthesis	INTERNAL COMBUSTION ENGINES Spray Combustion	INTERNAL COMBUSTION ENGINES SI Engine Applications II	CHEMICAL REACTION Combustion Reaction Kinetics II	COMBUSTION FUNDAMENTALS Combustion Diagnostics
10:30	Keynote Lecture (10:30-11:05) Plasma electrification for decentralized production of green ammonia <i>Xin Tu</i>	Theoretical screen of composite metal hydride for low-temperature ammonia synthesis <i>Zhengqing Huang, Shuyue He, Xue Su, Chunran Chang</i>	Optical study of high-pressure liquid ammonia partial premixed combustion in an activated thermal atmosphere <i>Zhenyang Ming, Haifeng Liu, Wenjie Wang, Jiapei Kang, Jiuling Sun, Yanqing Cui, Mingsheng Wen, Mingfa Yao</i>	Large eddy simulation of ammonia-diesel dual fuel spray combustion: Effects of ambient condition on ignition characteristics <i>Junqing Zhang, Danan Chen, Xing Li, Jun Li, Hongyu Huang, Noriyuki Kobayashi</i>	Deep neural networks for combustion chemical kinetics of ammonia-methane blends with a posteriori validation <i>Ke Xiao, Han Li, Zhi Chen</i>	Ammonia quantification via laser absorption spectroscopy: From fundamentals to applications <i>Denghao Zhu, Sumit Agarwal, Leopold Seifert, Bo Shu, Ravi Fernandes, Zhechao Qu</i>

10:50		Impacts of in-situ absorption to mild ammonia synthesis: A CFD modeling study <i>Tianbao Gu, Vincenzo Liso</i>	An experimental study on the macroscopic behaviours of ammonia sprays in a constant volume chamber <i>Li Shen, Felix Leach</i>	Effects of ammonia cracking degree on characteristics of pilot-diesel-ignited ammonia engine <i>Ze Li, Tie Li, Run Chen, Xinyi Zhou, Shuai Huang, Xinran Wang</i>	Developing a versatile reduced chemical mechanism for ammonia/dimethyl ether blend combustion <i>Tao Cai, Aikun Tang</i>	Chemiluminescence spectra investigation of ammonia flame under wide equivalence ratio in a rapid compression machine <i>Qihang Zhang, Yunliang Qi, Ridong Zhang, Xing Chao, Zhi Wang</i>
11:10	Invited Lecture (11:05-11:30) Nitrogen fixation by hydrides under plasma <i>Jianping Guo</i>	Keynote Lecture (11:10-11:45) Mechanochemical ammonia synthesis (McAmmonia) <i>Jong-Beom Baek</i>	Droplet size and temperature distributions of liquid ammonia sprays at various superheat levels using a hollow cone nozzle <i>K.D. Kunkuma A. Somarathne, Yirong Chen, Keito Honda, Taku Kudo, Akihiro Hayakawa, Hideaki Kobayashi</i>	Effects of NH ₃ injection parameters on combustion and emission of a marine NH ₃ /diesel dual-fuel engine <i>Yan Peng, Hongmei Li, Yuchen Hu, Jiang Qi, Yaodong Feng, Wenzheng Zhang</i>	A review of the ammonia pyrolysis and oxidation chemistry <i>Manuel Monge Palacios, Xiaoyuan Zhang, Mani Sarathy</i>	Characterizing chemiluminescence features of CH ₄ -cracked NH ₃ -air premixed laminar flames <i>Dinesh Mengu, Gani Issayev, Thibault F. Guiberti</i>
11:30	Nitrogen addition on ammonia cracking in downstream of microwave argon plasma <i>Xinhua Zhang, Min Suk Cha</i>		Keynote Lecture (11:30-12:05) The role of high-fidelity simulations in understanding ammonia combustion and developing combustion models <i>Kun Luo</i>	Experimental study on the characteristics of high-pressure liquid ammonia and simulation analysis of combustion process of diesel/ammonia dual-fuel engine <i>Yalong Liu, Kai Xu, He Zhang, Jin Zhao, Xu He</i>	Advancing ammonia-hydrogen combustion reaction kinetics: Informative experimental datasets constructed through global-sensitivity-based clustering <i>Chenyue Tao, Yiru Wang, Chengcheng Liu, Bin Yang</i>	Identifying heat release rate profiles with excited species in laminar premixed ammonia-methane-air flames <i>Yujing Wei, Xuren Zhu, Gani Issayev, Yi-bing Cheng, Thibault Guiberti, Yu Wang</i>

11:50	<p>Sustainable ammonia production via plasma oxidation and electrocatalytic reduction</p> <p><i>Jing Sun, Renwu Zhou</i></p>	<p>Invited Lecture (11:45-12:10)</p> <p>Supported metal catalysts boosted by interpretable machine learning</p> <p><i>Weixue Li</i></p>		<p>Influences of intake temperature and air-fuel ratio on ammonia-fueled engines with diesel pilot ignition</p> <p><i>Yuxiao Qiu, Dong Han, Zhen Huang</i></p>	<p>An efficient mechanism optimization method for ammonia combustion with deep reinforcement learning</p> <p><i>Hao Hu, Huangwei Zhang</i></p>	<p>Multi-speciation measurement and kinetic modeling of $\text{NH}_3/\text{C}_2\text{H}_6$ and $\text{NH}_3/\text{C}_2\text{H}_5\text{OH}$ oxidation in a shock tube</p> <p><i>Mengdi Li, Denghao Zhu, Henrique Karas, Sumit Agarwal, Zhechao Qu, Kai Moshhammer, Ravi Fernandes, Bo Shu</i></p>
12:10	<p>Species and temperature measurements in an ammonia plasma reactor</p> <p><i>Max Bernard, Galia Faingold, Si Shen, Joseph K. Lefkowitz</i></p>	<p>Theoretical study on the mechanism of single-atom catalyst electrocatalytic nitrogen reduction of ammonia</p> <p><i>Dandan Xu, Beibei Yan, Jinglan Wang, Guanyi Chen, Zhanjun Cheng</i></p>	<p>Invited Lecture (12:05-12:30)</p> <p>Challenges and opportunities for ammonia as a future energy vector</p> <p><i>Felix Leach</i></p>	<p>Mechanism and experimental study of turbulent jet enhanced combustion in ammonia-diesel dual-fuel engine</p> <p><i>Jiayong Wang, Qingyang Ma, Minshuo Shi, Jiewei Lin, Binyang Wu</i></p>	<p>Identification of well-parameterised reaction steps in detailed combustion mechanisms – a case study of ammonia/air flames</p> <p><i>András György Szanthoffer, Máté Papp, Tamás Turányi</i></p>	<p>Characteristics of ammonia supersonic combustion assisted by hydrogen micro jets</p> <p><i>Xin Song, Zun Cai, Jianheng Ji, Taiyu Wang, Mingbo Sun</i></p>
12:30	LUNCH (90 Minutes)					

14:00	<p style="text-align: center;">Plenary Lecture Renewable energy-driven NH₃ synthesis and its decomposition <i>Junwang Tang</i> Chair: Agustin Valera Medina</p>
14:45	<p style="text-align: center;">Plenary Lecture Net ammonia engine: A utopia or still a challenge? <i>Christine Rousselle</i> Chair: Agustin Valera Medina</p>
15:30	<p style="text-align: center;"><u>Excursion (15:30-22:00)</u> <u>Huangpu River Cruise</u></p> 

Thursday, 26 September 2024

Room	ROOM 1	ROOM 2	ROOM 3	ROOM 4	ROOM 5	ROOM 6	ROOM 7
	FUEL CELLS, PRODUCTION AND MATERIALS Fuel Cell and Cracking	ENVIRONMEN-TAL, LCA, TEA LCA and TEA Analysis	NOVEL TECHNOLOGIES Propulsion Applications	COMBUSTION FUNDAMENTALS NO _x Formation and Control II	COMBUSTION FUNDAMENTALS Laminar Diffusion Flames	COMBUSTION FUNDAMENTALS Turbulent Combustion	COMBUSTION FUNDAMENTALS Ignition and Oxidation
08:00	Keynote Lecture (8:00-8:35) Tailoring Ni-CeO ₂ microstructures for effective catalytic conversion ammonia into hydrogen <i>Guozhu Liu</i>	Effect of water vapor on metal wall nitriding induced by ammonia flame <i>Jose Luis Osorio-Tejada, Volker Hessel</i>	Comparison of thermodynamics performance of precooled cycle engines with ammonia as the fuel and coolant <i>X. Zhang, Y. Lu, X.J. Fan</i>	Ammonia combustion and N ₂ O formation under internal combustion engine conditions - numerical studies <i>Carl-Otto Olsson Sjögren, Gert Jan Rens, Yuchen Zhou, Bart Somers, Leilei Xu, Xuesong Bai</i>	Insight into the instability of ammonia-methane laminar diffusion flame <i>Guorong Lin, Chenyang Fan, Zheng Fu, Ye Liu, Huiyong Du, Bin Xu, Shuo Jin, Mingliang Wei</i>	Effects of turbulence length scale and mixture composition on dynamics of lean hydrogen-ammonia premixed flames <i>Ruslan KHamedov, Francisco E. Hernández-Pérez, Hong G. Im</i>	Experimental and modeling study on the autoignition of ammonia/1-methylnaphthalene mixtures <i>Yongxiang Zhang, Liang Yu, Xingcai Lu</i>
08:20		The road to flexibility in ammonia plants: What direction? <i>Arianna Baldinelli, Hanfei Zhang, Umberto Desideri</i>	Experimental investigation on ammonia/hydrogen/air rotating detonation <i>Yiming Dai, Shijie Liu, Weijie Fan, Haoyang Peng, Hailong Zhang, Siyuan Huang</i>	Determination of optimal NH ₃ cofiring condition in fluidized bed reactor for NO _x reduction: NH ₃ cofiring ratio and stoichiometric ratio <i>Jae-Sung Kim, Haotian Ma, Min-Woo Kim, Byoung-Hwa Lee, Chung-Hwan Jeon</i>	Exploring the stabilization mechanism of NH ₃ /CH ₄ non-premixed flames under gradient magnetic fields <i>Hetong Gao, Yueming Wang, Minmin Zhou, Yuxing Wang, Lunbo Duan</i>	Experimental study of the combined effect of ammonia addition on blow-out limits of non-premixed turbulent jet flames in a cross flow <i>Shaofei Wang, Fei Tang, Jingru Zheng, Jiang Lv, Longhua Hu</i>	Experimental and numerical study of NH ₃ /CH ₄ blends combustion and oxidation <i>Ksenia Osipova, Andrey Shmakov</i>

08:40	<p>Invited Lecture (8:35-9:00)</p> <p>Ammonia-fueled solid oxide fuel cells: Mechanism studies and stack integration</p> <p><i>Yuqing Wang</i></p>	<p>Application scenarios and economic analysis of green ammonia as a hydrogen carrier</p> <p><i>Yue Zeng, Yue Wang, Xiwen Song, Qingxun Li</i></p>	<p>Hybrid SOFC-GT system operating with ammonia</p> <p><i>Giovanni Cinti, Gabriele Gagliardi, Orlando Palone, Domenico Borello</i></p>	<p>NO_x emission prediction of CH₄/NH₃ premixed combustion by the CFD-CRN method with unsupervised machine learning</p> <p><i>Ying Li, Chao Zong, Bofan Liu, Tong Zhu, Chenzhen Ji</i></p>	<p>Measurements of NO* profiles in hydrogen-ammonia-air counterflow diffusion flames</p> <p><i>G. Issayev, X. Zhu, T.F. Guiberti</i></p>	<p>Flame stabilization and emission characteristics of confined non-premixed ammonia turbulent jet flames under oxygen enriched conditions</p> <p><i>Daichi Matsumoto, Yu Xia, Tanji Kai, Taku Kudo, Akihiro-Hayakawa, Hideaki Kobayashi</i></p>	<p>Experimental investigation into the ignition characteristic of NH₃/O₂/N₂ mixtures at high pressures</p> <p><i>Yueying Liang, Zimu Wang, Wei Zhou, Liang Yu, Xingcai Lu</i></p>
09:00	<p>Ammonia partial cracking over low-cost Ni catalysts for enhancing combustion</p> <p><i>Mingyu Yu, Guangqian Luo, Ruize Sun, Xian Li, Hong Yao</i></p>	<p>Keynote Lecture (9:00-9:35)</p> <p>A holistic value chain assessment of sustainable ammonia as an energy carrier</p> <p><i>Yusuf Bicer</i></p>	<p>Thermodynamic performance evaluation of an ammonia-hydrogen fusion turbine-less aviation hybrid system</p> <p><i>Sibo Han, Tianyou Lian, Yichen Cao, Ziqiang Mao, Yuxuan Teng, Bingyi Zhao, Sihang Zhao, Xiaoxiang Shi, Wei Li, Yuyang Li</i></p>	<p>Effects of primary and secondary air nozzle distance on NO emission characteristics in an ammonia co-combustion furnace with parallel injection system</p> <p><i>Yinan Yang, Tsukasa Hori, Shinya Sawada, Fumiteru Akamatsu</i></p>	<p>A note on chemiluminescence in diffusion ammonia-hydrogen-air flames</p> <p><i>Alexander Konnov</i></p>	<p>Ammonia combustion enhancement through refined flow organization: Characteristics of stratified swirl flame</p> <p><i>Tianyou Lian, Soroush Sheykhbaglou, Xiaoxiang Shi, Wei Li, Yuyang Li</i></p>	<p>Experimental study and kinetic modeling of NH₃/DME blends oxidation in a jet stirred reactor</p> <p><i>Mingyu Yu, Guangqian Luo, Ruize Sun, Xian Li, Hong Yao</i></p>

09:20	<p>Ammonia decomposition for efficient hydrogen generation over Ce-promoted Ni-based catalysts derived from NiAl₂O₄</p> <p><i>Denghui Cheng, Zhen Huang, Jia Yang</i></p>		<p>Ignition and combustion characteristics of ammonia-hydrogen blends by hydrogen-enriched pre-chamber jet</p> <p><i>Xinpeng Guo, Tie Li, Run Chen, Wenzhe Wei, Zehao Wu, Shuai Huang</i></p>	<p>Characterization and influence mechanism of NH₃/CH₄ co-combustion pollutants under MILD conditions</p> <p><i>Huichun Wang, Ping Chen, Mingyan Gu, Kun Luo</i></p>	<p>Liftoff heights and blowoff limits of coflow nonpremixed ammonia/methane flames</p> <p><i>Zhanhong Xiang, Dominic Curtis, Charles S. McEnally, Lisa D. Pfeifferle, Zhengrong Qian, Aislinn C. Whalen, Vivian C. Whoriskey</i></p>	<p>Effects of turbulence on the preferential diffusion and flame structure of premixed NH₃/H₂/N₂-air jet flames</p> <p><i>Robin Schultheis, Tao Li, Robert S. Barlow, Bo Zhou, Dirk Geyer, Andreas Dreizler</i></p>	<p>Numerical simulation of the impact of spark parameters on the ignition of ammonia/hydrogen/air mixtures</p> <p><i>Marcel Reinbold, Stefan Essmann, Detlev Markus, Chunkan Yu, Ulrich Maas</i></p>
09:40	<p>Advancements in low-temperature ammonia decomposition on Cs-Ru/CeO₂ catalysts: A kinetic study</p> <p><i>Gaetano Anello, Roberto Fiorillo, Giulia De Felice, Fausto Gallucci</i></p>	<p>Invited Lecture (9:35-10:00)</p> <p>Environmental life cycle costing of conventional and plasma-based distributed ammonia supply</p> <p><i>Jose Osorio Tejada</i></p>	<p>The effect of injection temperature on ammonia sprays</p> <p><i>Li Shen, Khaled Alimi Felix Leach</i></p>	<p>Ammonia combustion enhancement with reactive fuel co-firing strategy: Insight into transition in flame propagation and NO formation</p> <p><i>Jianguo Zhang, Jun Fang, Wei Li, Yuyang Li</i></p>		<p>Flame and flow characteristics of lean premixed turbulent NH₃/H₂/N₂-air flames with increasing Karlovitz number</p> <p><i>Tao Li, Shuguo Shi, Robin Schultheis, Bo Zhou, Andreas Dreizler</i></p>	<p>Experimental and modeling investigations on the autoignition of RP-3/HEFA kerosene with ammonia addition</p> <p><i>Yuan Yue, Mengyuan Wang, Jie Shi, Xin Hui, Chongwen Zhou</i></p>
10:00	<p>Coffee Break (30 minutes)</p> <p>Visit the Work in Progress Posters</p>						

Room	ROOM 1	ROOM 2	ROOM 3	ROOM 4	ROOM 5	ROOM 6	ROOM 7
	INTERNAL COMBUSTION ENGINES Engine Combustion	GAS TURBINES Gas Turbine Application	PRODUCTION AND MATERIALS Electrochemical and Thermochemical Synthesis	THERMAL APPLICATIONS Boiler Applications	COMBUSTION FUNDAMENTALS Swirl Flames	CHEMICAL REACTION Combustion Theoretical Calculation	MODELLING Combustion Numerical Simulation I
10:30	Keynote Lecture (10:30-11:05) Recent progress in combustion and emissions of ammonia-based engines <i>Haiqiao Wei</i>	Ammonia-hydrogen gas turbine model combustor analyses under dilution and preheating condition <i>Amir Mardani, Hanyoung Kim, Kyung Chun Kim, Sechul Oh</i>	Tailoring zirconium oxynitride thin films via ion implantation for electrochemical nitrogen reduction <i>Zulfitri Rosli, Siriluck Tesana, Peng Cao, Prasanth Gupta</i>	Experimental investigation of ammoniacal co-combustion in the boiler of a 300-MW coal-fired power station <i>Haiyan Li, Wangping Sun, Qifu Lin, Huaqing Ya, Chengzhou Liu, Yu Cheng, Shidong Fang, Zhenyang Li, Weiye Chen, Hansheng Feng, Guang-nan Luo, Jiangang Li</i>	Experimental and large eddy simulation investigation of NH ₃ -CH ₄ axial-staged turbulent swirling combustion <i>Kailun Dai, Zeyu Zhang, Ping Wang, Weijia Qian, Ruiyang Shuai, Antonio Ferrante</i>	Theoretical and kinetic study of key reactions between ammonia and fuel molecules: H-atom abstraction from five ketones by NH ₂ radicals <i>Jingwu Sun, Yuan Yue, Yan Tang, Dongsheng Wen, Chongwen Zhou</i>	Numerical investigation of the ammonia/diesel dual fuel engine combustion under high ammonia substitution ratio <i>Shouzhen Zhang, Qinglong Tang, Haifeng Liu, Rui Yang, Mingfa Yao</i>
10:50		Detailed chemistry modeling of ammonia/methane combustion in a swirl burner for gas turbine combustion applications <i>Medhat Nemitallah, Mohammed El-Adawy</i>	Bi-doped CuFe/CF utilized as a catalyst for lattice structure modulation to improve the efficiency of electrocatalytic ammonia synthesis <i>Chaofan Guo, Jinzhan Su, Suyi Yang</i>	CFD evaluation of ammonia co-firing strategy in a 1000 MWe wall-firing coal boiler <i>Seonkyo Ha, Woosuk Kang, Yunha Koo, Changkook Ryu, Donggyu Kim, Kyoungil Park, Sehyun Baek</i>	A novel strategy for effective ignition of pure ammonia within swirling flow fields <i>Wenbin Jiang, Cheng Zhang, Dong Li, Hai'e Chen, Xiyun Du, Fei Ge, Lei Wang, Na Li, Yu Hu, Fu Zhang, Mengmeng Zhang</i>	Implications of NH ₂ radical reactions in NH ₃ dual fuel combustion <i>Binod Giri</i>	Differential diffusion effect in partially cracked ammonia non-premixed flames <i>Junjun Guo, Francisco Hernández-Pérez, Hong G. Im</i>

11:10	<p>Invited Lecture (11:05-11:30)</p> <p>Ammonia spray combustion: from spray model development to combustion optimization strategy</p> <p><i>Jun Li</i></p>	<p>Keynote Lecture (11:10-11:45)</p> <p>Towards ammonia applications: Recent advances in experimental flame stabilization and pollutant emissions of turbulent ammonia and blended ammonia flames</p> <p><i>Ayman Elbaz</i></p>	<p>Ionic liquid-boosted nitrogen reduction reaction (NRR) on TMDC-Based Electrodes</p> <p><i>Pablo Barraza, Katherine Rex, Sofía Vinés, Jessica Honores, Rodrigo Del Río, Mauricio Isaacs</i></p>	<p>Ignition characteristics of pulverized coal particles under different ammonia co-firing conditions</p> <p><i>Zuochao Yu, Yong He, Jingye Chen, Wubin Weng, Zhihua Wang</i></p>	<p>Structure and ultraviolet chemiluminescence of NH₃/H₂/Air micromix flames</p> <p><i>Can Cao, Linyao Zhang, Chang Xing, Li Liu, Penghua Qiu, Shaozeng Sun</i></p>	<p>The effect of the pre-decomposition of NH₃ on its combustion performance: A ReaxFF study</p> <p><i>Guanglei Wang, Hai Zhang, Yutong Hu, Wenyang Liu, Weidong Fan</i></p>	<p>Influence of geometrical reduction on the numerical modelling of swirl flames in ammonia and methane co-firing</p> <p><i>Joanna Jojka, Pawel Czyzewski, Natalia Kapela</i></p>
11:30	<p>Enhancing ammonia combustion using pre-chamber turbulent jet combined with various ignition strategies</p> <p><i>Rongjie Li, Shijun Dong, Huimin Wu, Zhaowen Wang</i></p>		<p>Strontium lithium nitride-hydride as an ammonia synthesis catalyst</p> <p><i>E.M. McGarrigle, F.A. Ghaida, E. Onur, J. Ternieden, C. Weidenthaler, J.W. Makepeace</i></p>	<p>Experimental investigation on the effect of ammonia blending on the flow and ignition behaviors of pulverized coal during Co-combustion</p> <p><i>Chaoqiang Yang, Yuegui Zhou, Gang Chen, Lanbo Li, Anwen Peng</i></p>	<p>Experimental and numerical study of flame characteristics and NO_x emissions of CH₄/NH₃ blends using a swirl burner</p> <p><i>Bingbing Zheng, Zilin Zhu, Boya Yang, Xiaohan Ren, Huanhuan Xu</i></p>	<p>A theoretical kinetic study of $\dot{C}H_3 + \dot{N}H_2$: From electronic structure to NH₃/CH₄ combustion modelling implication</p> <p><i>Y. Zhu, S.J. Klippensetin, Y. Ishida, K. Tamaoki, K. Kanayama, H. Nakamura, K. Hakimov, J.B. Zou, A. Farooq, N. Farzana, B. Shu, R. Fernandes, H.J. Curran, Chongwen Zhou</i></p>	<p>Combustion characteristics of ammonia-air in a heat-recirculating Swiss-roll burner</p> <p><i>Bowen Sun, Xin Kang, Yu Wang</i></p>

11:50	<p>The two-phase characteristics of liquid ammonia jet spray flame in a hot and low-oxygen coflow</p> <p><i>Ruixiang Wang, Zhenhua An, Jiawen Liu, Meng Zhang, Jian Chen, Jinhua Wang, Zuohua Huang</i></p>	<p>Invited Lecture (11:45-12:10)</p> <p>Toward methane-equivalent thermochemical properties in ammonia co-firing systems for gas turbine applications</p> <p><i>Wei Li</i></p>	<p>Ammonia synthesis under mild conditions: Catalyst and process</p> <p><i>Yue Wang, Xuerui Zhang, Xiwen Song, Boyan Chen, Haijun Zhong</i></p>	<p>Effects and mechanism of ammonia reburning on CO and NO in pulverized coal combustion</p> <p><i>Jingyi Chen, Weijuan Yang, Pengsheng Shi, Yong He, Zihua Wang</i></p>	<p>Simultaneous imaging of NH₂, NH, and NH₃ in ammonia-hydrogen-nitrogen flames using a single dye laser</p> <p><i>Hongchao Dai, Santiago Cardona Vargas, Shixing Wang, Jinhua Wang, Zuohua Huang, Thibault Guiberti</i></p>	<p>Kinetics investigation on the C₂H₅ + NO₂ reaction system</p> <p><i>Yuan Yue, Luna Pratali Maffei, Andrea Della Libera, Chongwen Zhou</i></p>	<p>A model extension for the artificially thickened flame approach for lean ammonia-hydrogen flames with intrinsic instabilities</p> <p><i>Vinzenz Schuh, Christian Hasse, Hendrik Nicolai</i></p>
12:10	LUNCH (80 Minutes)						

Room	ROOM 1	ROOM 2	ROOM 3	ROOM 4	ROOM 5	ROOM 6	ROOM 7
	PRODUCTION AND MATERIALS Electrochemical and Thermochemical Synthesis	NOVEL TECHNOLOGIES Energy Systems and Safety	INTERNAL COMBUSTION ENGINES NH ₃ /H ₂ Engine Combustion	THERMAL APPLICATIONS Novel Burner Combustion	ENVIRONMENTAL, LCA, TEA Environmental Impact	NOVEL TECHNOLOGIES Novel Combustion Technologies	MODELLING Combustion Numerical Simulation II
13:30	Keynote Lecture (13:30-14:05) Redox-mediated reduction of nitrogen to ammonia: challenges and prospects <i>Alexandr Simonov</i>	Non-equilibrium sorption kinetic models of metal chloride-ammonia working pairs <i>Yanling Chen, Chen Zhang, Liwei Wang</i>	Combustion performance study of ammonia-hydrogen mixture on marine four-stroke engine <i>Yadi Zhang, Yilin Ning</i>	Numerical investigation and optimization of porous media burner for NH ₃ /O ₂ /H ₂ O combustion <i>Yu Zhang, Linyao Zhang, Xincheng Li, Wenda Zhang, Penghua Qiu, Yijun Zhao, Shaozeng Sun</i>	Ammonia/methanol mixtures: A possible green energy <i>Adrián Ruiz-Gutiérrez, Irene De Diego, María U. Alzueta</i>	Analysis of ammonia co-firing in air-fired and oxy-fuel coal combustion power plants <i>Marco Jano-Ito, Agustin Valera-Medina</i>	On the effect of kinetic model on NO _x emissions in premixed NH ₃ -CH ₄ turbulent flames using LES-CRN methodology <i>Luca Mazzotta, Roberto Meloni, Giulia Babazzi, Egidio Pucci, Domenico Borello, Agustin Valera-Medina</i>
13:50		Operational risks assessment and safety evaluation in retrofitting LNG FSRU for cleaner energy carriers: Ammonia and hydrogen <i>Andriani Dindha, Bicer Yusuf</i>	Experimental and numerical study of low hydrogen energy ratio active jet ignition ammonia-hydrogen engine <i>Qiyanga Sun, Yunliang Qi, Zhelong Lin, Yi Liu, Wuzhe Zhu, Zhi Wang</i>	Research on the stable combustion range and staged combustion of ammonia-methane in porous media burner <i>Heng Zhang, Jiwei Zhou, Jianguo Du, Xiong Liang, Yibing Cheng, Yu Wang</i>	Investigating the impact of extreme ammonia environments on the nitridation behavior of superalloys <i>Nicole Laws, Estefany Sarabia, Felipe Campuzano, William Roberts</i>	Analysis of nanosecond repetitively pulsed discharge and cracking effects on ammonia swirl premixed flames <i>Nader Shohdy, Mhedine Alicherif, Et-touhami Es-sebbar, Thibault Guiberti, Deanna Lacoste</i>	Large eddy simulation of the KAUST piloted ammonia flame with the DMC and FGM model <i>Xin Zhou Tang, Yicun Wang, Jiangkuan Xing, Kun Luo, Qingqing Xue, Jianren Fan</i>

14:10	<p>Invited Lecture (14:05-14:30)</p> <p>Model catalyst insights towards a new promotion mechanism for ammonia synthesis under mild conditions</p> <p><i>Ke Zhang</i></p>	<p>Keynote Lecture (14:10-14:45)</p> <p>Composite solid sorption for ammonia energy storage and conversion</p> <p><i>Liwei Wang</i></p>	<p>Numerical investigation of multiple hydrogen injection in ammonia-hydrogen combination engine with injecting jet ignition</p> <p><i>Jin Yu, Zhaoting Li, Shiyong Liao, Yituan He</i></p>	<p>Numerical study on combustion and emission characteristics of hydrogen/ammonia/methane in a can-type combustor</p> <p><i>Wenjin Lai, Aiguo Chen, Zishi Fu, Hua Xiao</i></p>	<p>A novel exhaust aftertreatment technology for simultaneous elimination of NO, NO₂ and NH₃ of pilot-diesel-ignited ammonia engines</p> <p><i>Xinran Wang, Tie Li, Shuai Huang, Xinyi Zhou, Run Chen, Shiyan Li</i></p>	<p>Experimental study on plasma assisted combustion of ammonia/methane blended fuels</p> <p><i>Xiang Liu, Siyin Zhou, Wansheng Nie</i></p>	<p>Direct numerical simulation of the ammonia/air premixed flame: Flame-turbulence interaction at high Karlovitz numbers</p> <p><i>Ziheng Wu, Runze Mao, Zhenhua An, Zhi X. Chen</i></p>
14:30	<p>Structural optimization of V₂O₃/VN hybrids for electrochemical ammonia synthesis through nitrogen reduction reaction</p> <p><i>Uk Sim, Tae-Yong An, Subramani Surendran, Chanmin Jo, Dae Jun Moon, Joon Young Kim, Gyoung Hwa Jeong</i></p>		<p>Experimental investigation of an ammonia-hydrogen co-fired lean burn spark ignition engine</p> <p><i>Sikai Geng, Ajith Ambalakatte, Reese Murugan, Alasdair Cairns, Anthony Harrington, Jonathan Hall, Mike Bassett</i></p>	<p>Study on the combustion characteristics of NH₃/H₂ flames in a radial porous media burner</p> <p><i>Guguloth Mahesh Nayak, Silky Elanjickal, Beni Cukurel, Joseph K. Lefkowitz</i></p>	<p>Deep learning-based ammonia emission prediction model for light-duty gasoline vehicles</p> <p><i>Xin Wang, Chongyao Wang, Ruonan Li, Changyu Wang, Huaiyu Wang</i></p>	<p>Nanosecond-pulsed high-frequency discharge ignition in ammonia-air flow: Ignition limit & ignition power</p> <p><i>Si Shen, Weronika Senior-Tybora, Joseph K. Lefkowitz</i></p>	<p>Analysis of turbulent combustion modeling strategies for precracked ammonia-hydrogen blends using 3D GPU DNS</p> <p><i>Driss Kaddar, Hendrik Nicolai, Cristos Emmanouil Frouzakis, Mathis Bode, Christian Hasse</i></p>

14:50	<p>Electrochemically enhanced low-temperature catalytic ammonia synthesis</p> <p><i>Philipp Blanck, Daniel Schmider, Julian Dailly, Olaf Deutschmann</i></p>	<p>Invited Lecture (14:45-15:10)</p> <p>Ammonia as a ZC fuel – towards emissions free combustion</p> <p><i>Syed Mashruk</i></p>	<p>Experimental investigation of the ignition characteristics in an ammonia swirl combustor</p> <p><i>Jin Gou, Xiao Liu, Leilei Xu, Fang Chen, Shilin Yan</i></p>	<p>Cation chemistry in flames fueled by CH₄/NH₃ blends</p> <p><i>Denis Knyazkov, Andrey Cherepanov, Andrey Shmakov</i></p>	<p>Effect of water vapor on metal wall nitriding induced by ammonia flame</p> <p><i>Yujian Xing, Daoyuan Wang, Minhyeok Lee, Yuji Suzuki</i></p>	<p>Effect of H₂O on NO_x formation mechanism of NH₃ oxy-steam combustion under MILD mode</p> <p><i>Xiaojian Zha, Zewu Zhang, Zhenghong Zhao, Liqi Zhang</i></p>	<p>A direct numerical simulation study on a laboratory-scale turbulent cracked ammonia flame</p> <p><i>Jiangkuan Xing, Zhenhua An, Ryoichi Kurose</i></p>
15:10	<p>Coffee Break (20 minutes)</p> <p>Visit the Work in Progress Posters</p>						

Room	ROOM 1	ROOM 2	ROOM 3	ROOM 4	ROOM 5	ROOM 6	ROOM 7
	H&S Workshop			COMBUSTION FUNDAMENTALS Ammonia co-firing	PRODUCTION AND MATERIALS Ammonia Cracking II	FUEL CELLS Fuel Cell Applications II	COMBUSTION FUNDAMENTALS Related chemistry
15:30	H&S Workshop			Keynote Lecture (15:30-16:05) Fundamental research of NH ₃ Combustion and Co-firing with Coal <i>Zhihua Wang</i>	Plasma-assisted ammonia decomposition under Ru-promoted doubly metallic catalysts <i>Z. Wang, H. He, S. Tan, W. Li, R. Zhang, X. Hao, C. Li</i>	Design and development of a hybrid ammonia fuel cell <i>Wenzhi Li, Yun Liu, Zhefei Pan, Liang An</i>	Insight into the in-situ amination of lignin during ethylenediamine pretreatment: The amination mechanism and influence on lignin properties & pyrolysis process <i>Zihao Liu, Jiazhao Chen, Peter J. Deuss, Haiping Yang, Hanping Chen</i>
15:50					Kinetics analysis of glide arc plasma-assisted ammonia decomposition for on-board vehicle applications <i>Guangyu Dong, Yanxiong Zhou, Liguang Li</i>	DA-SOFCs: From the synthesis of new materials to electrical power measurements <i>L. Troncoso, P. Rivas-Rojas, L. Mogni, M. Arce, J.A. Alonso</i>	A primarily kinetics study of ammonia reduction of pellet <i>Yuejun Liu, Xianchun Li, Shaoyan Wang, Li Li, Dongke Zhang</i>

16:10	H&S Workshop			<p>Invited Lecture (16:05-16:30)</p> <p>Ammonia: A pathway to a sustainable energy future</p> <p><i>Binod Giri</i></p>	<p>Study on the discharge and pollutant emission characteristics of sliding arc plasma in air, ammonia, and mixed gases</p> <p><i>Jike Liang, Zou Wu, Xu Meng, Keke Li, Mian Chen, Mingyan Gu, Kaixin Xiang, Shidong Fang</i></p>	<p>Numerical study of direct ammonia solid oxide fuel cells (DA-SOFCs) with different cathode gas heat capacities (O₂-N₂, O₂-CO₂, O₂-H₂O, pure O₂)</p> <p><i>Yimin Liu, Yishu Xu, Yuchen Ya, Boyu Sun, Junjia Liu, Mingyuan Xiang, Xiaobei Cheng</i></p>	<p>Core-shell heterostructure NiMoP_x@Ni₅P₄ nanorod arrays catalyze high efficiency electrolysis of aquatic hydrogen under industrial conditions</p> <p><i>Bing Han, Jian Liu</i></p>
16:30				<p>Analysing and understanding ammonia-hydrogen air mixtures explosibility</p> <p><i>Francis Oppong, Hongjian Deng</i></p>	<p>Spin effect-driven efficient catalyst design for ammonia synthesis</p> <p><i>Cao Ang, Ke Zhang, Ib Chorkendorff, Jens K. Nørskov</i></p>	<p>Experimental study on the long-term stability and thermal cycling endurance of micro-tubular solid oxide fuel cells and stacks using ammonia</p> <p><i>Jixin Shi, Junhua Fan, Ruiyu Zhang, Yue Yao, Yuqing Wang, Bo Liang, Yixiang Shi, Ningsheng Cai</i></p>	<p>Flame surface structure and temperature of a lean premixed H₂/air turbulent flame</p> <p><i>Shuguo Shi, Tao Li, Robin Schultheis, Robert S. Barlow, Dirk Geyer, Andreas Dreizle</i></p>
17:00	Closing Remarks						
18:00	Farewell Reception (18:00-20:00)						

Poster (Wednesday, 25 September 2024)

Poster Number	Title	Authors
P1-1	A high entropy alloy for ammonia production	Daniela Silva, Magdalena Walczak, Mamié Sancy,
P1-2	Plasma-assisted ammonia cracking catalyzed by Ru-based catalysts	W.J. Li, H. He, R. Zhang, C.E. Li
P1-3	Electronic structure regulation and performance improvement of Ga doped NiAl hydrotalcite catalyst for ammonia decomposition	Xinru Zhao, Dan Wu
P1-4	Experimental study on the influence of ammonia concentration on ammonia oxidation reaction	Yanchen Lai, Bowen Wang, Chasen Tongsh, Kui Jiao
P1-5	An experimental study on optimization of ammonia co-firing in an 80 kWth pulverized coal combustion system	Woohyun Sim, Seonghwan Hawng, Taeyoung Chae, Jaewook Lee, Won Yang
P1-6	An experimental study of the characteristics of NH ₃ combustion in a flat flame burner	Hongwu Li, Xianchun Li, Jianting Lin, Dinghan Song
P1-7	Study of instability characteristics and ammonia mixing limit of methane/ammonia/air laminar premixed flames at high-altitude areas	Xiao Yang, Jianmin Gao, Shijiu Ma, Qian Du, Yu Zhang, Heming Dong
P1-8	Effects of equivalence ratio on the auto-ignition characteristics of low blending ratio ethanol-ammonia mixture	Lekang Ding, Zhao Li, Changliang Wang, Zunlong Jin, Houbo Li
P1-9	Autoignition and lift-off behavior of ammonia and hydrogen blended fuel jet flame	Jiayue Liu, Yuxin Wu
P1-10	Soot formation in 1-butene/ammonia co-pyrolysis	Chen Chen, Yaoyao Ying, Dong Liu
P1-11	Theoretical study on the effects of methane on ammonia decomposition	Jing Wang, Tong Li, Xi Zhuo Jiang
P1-12	Research on the impact of nitromethane on the combustion mechanism of ammonia/methanol blends	Yuan Zhuang, Yihan Li, Rui Zhai, Zhihong Lin
P1-13	Prediction of nox emissions of premixed ammonia- hydrogen-air swirling flames using machine learning	Nwode Agwu, Agustin Valera-Medina, Syed Mashruk, Mohammad Alnajideen, Jordan Davies, Daisuke Sato
P1-14	Research on non-premixed ammonia-air ignition process in a blunt body combustor	Bingbing Zhao, Yuan Li, Xin Xu, Liming He
P1-15	Evaluation of the effect of ammonia co-firing on a supercritical pulverized coal boiler and a circulating fluidized boiler	Seongil Kim, Won Yang
P1-16	Study on the impact of ammonia injection position on the characteristics of ammonia-coal combustion and NO _x formation	Xin Wei, Mingyan Gu, Yong Wu, Shuanglong Li, Xiangyong Huang, Ping Chen

P1-17	Chemical reaction network analysis on NO _x emissions control strategies of ammonia combustion w/ in-situ SNCR	Minhyeok Kim, Jonghyun Kim, Ki Hyeon Ryu, Jungsoo Park
P1-18	Numerical analysis study to determine combustion characteristics according to hydrogen mixing ratio in a two-cylinder small ammonia-hydrogen dual injection engine	Hanul Song, Kangmin Ju, Joonsuk Kim, Jaesam Sim, Jungsoo Park
P1-19	Numerical study of flame propagation and emission characteristics for decarbonization of hydrogen and ammonia in 2-cylinder small engines	Kangmin Ju, Hanul Song, Donghoon Jeong, Myunghoon Han, Jungsoo Park
P1-20	Measurement of NH ₃ emission in CH ₄ /NH ₃ combustion exhaust gas with the mid-infrared laser absorption	J.T. Li, S.J. Guo, Z. Wu, Y.X. Wei, W.B. Liu, Z.Y. Xi, S.C. Yao
P1-21	Experimental studyExperimental study of combustion and emission characteristics of ammonia/air in bench-scale single burner furnace	Hwang Seong Hwan, Chae Tae Young, Lee Jae Wook, Sim Woo Hyun, Yang Won
P1-22	Parametric investigation of ammoniahydrogen flame characteristics in a nonpremixed burner	Bhanu Kodaru, Jens Brunzendorf, Rajesh Sadanandan, Denghao Zhu, Detlev Markus, Cheng Chi, Ravi Fernandes, Bo Shu, Sumit Agarwal
P1-23	Transient hydrogen jet characterization using schlieren imaging	Hao Wu, Moez Ben Houidi, Fahad Almatrafi, Jianguo Du, William Roberts
P1-24	The laminar burning velocity of NH ₃ +N ₂ O+H ₂ O mixtures and kinetic modeling	Jundie Chen, Alexander Konnov
P1-25	Experimental and kinetic study on the co-oxidation of pyridine and ammonia as a representative of coal and ammonia co-combustion	Ling-Nan Wu, Zi-Cheng Wei, Yu-Tong Hou, Zhi-Hao Zheng, Kai-Ru Jin, Xiao-Dong Wang, Teng-Long Lv, Jiu-Zhong Yang, Long Zhao, Zhen-Yu Tian
P1-26	Kinetic studies on plasma-assisted ammonia cracking and hydrogen-ammonia combustion	T. Xie, H. He, R. Zhang, X. Hao, C.E. Li
P1-27	Exploration of ammonia combustion mechanism based on molecular dynamics simulation	Kunqi Wang, Shuhao Li, Shuanghui Xi
P1-28	Numerical investigation on the ammonia spray cavitation and flashing spray atomization	Haotian Wu, Yang Zhang
P1-29	Numerical simulation of ammonia and coal combustion in supercritical circulating fluidized bed boiler	Xin Shen, Yan Jin, Hairui Yang
P1-30	Levelized cost of electricity in ammonia-coal co-combustion unit using green ammonia	Chenpeng Li, Zheng Li
P1-31	Design and construction of an ammonia combustion research laboratory	Jorge Céspedes, Christian Hernández, Paula Rojas, Claudio Munoz-Herrera, Germán Amador, Roberto Leiva, Mario Toledo

Poster (Thursday, 26 September 2024)

P2-1	Development of titanium nitride nanocubes as an effective electrocatalyst for electroreduction of nitrate-to-ammonia	Chanmin Jo, Subramani Surendran, Dae Jun Moon, Joon Young Kim, Gyoung Hwa Jeong, Uk Sim
P2-2	High yield conversion of nitrite into ammonia based on nickel-cobalt sulfide via structural design and electronic regulation	Yulai Wei, Yaoguang Wang, Zhiliang Zhao, Shengsong Wang, Juan Xiong, Yongming Hu, Xinyi Zhang
P2-3	Thermal treated Barium promoted Ruthenium catalyst with strong metal-support interaction for ammonia synthesis	Guojun Lan, Yuxiang Wang, Yongcheng Ma, Xianglei He, Zaizhe Cheng, Xiucheng Sun, Huazhang Liu, Ying Li
P2-4	Experimental investigations on the in-situ cracked premixed swirl ammonia flames	Balakrishnan Aravind, Syed Mashruk, Jordan Davies, Sivachidambaram Sadasivam, Agustin Valera-Medina
P2-5	Electrothermal synergistic promotion of electrochemical cells for nickel-based ammonia decomposition catalysts	Xiaobo Wang, Anru Yan, Zhiyong Wang
P2-6	The influence of electric field and pulse energy density in DBD on NO _x emissions with ammonia combustion	Shiheng Ye, Aidi He, Wentao Lin, Weiwei Kang, Qinglu Lin, Junjie Zhu, Kai Deng
P2-7	Study on the characteristics of NO _x formation in ammonia oxy-fuel combustion	Wentao Lin, Aidi He, Shiheng Ye, Weiwei Kang, Qinglu Lin, Junjie Zhu, Kai Deng
P2-8	Influence of oxygen-containing functional groups on sodium migration and conversion during ammonia-coal co-combustion	Yipu Dan, Jingying Xu
P2-9	Flame structure of partially cracked ammonia stabilized over a bluff-body burner	Diana Ezendeeva, Z Al Hadi, H Tang, B Dally, G Magnotti
P2-10	Laminar burning velocity of NH ₃ /NO/N ₂ mixtures: An experimental and numerical study	Noé Monnier, Nathalie Lamoureux, Seif Zitouni, Pierre Brequigny, Christine Mounaïm-Rousselle
P2-11	NH ₃ -DME fuel design for laminar flame speed optimization	Jiuwu Chen, Xiaolong Gou
P2-12	Towards understanding the optimal conditions for stable ammonia spray flames	Santiago Cardona Vargas, Hongchao Dai, Thibault Guiberti
P2-13	Combustion dynamics of pure and cracked ammonia swirling flames	Jordan Davies, Daisuke Sato, Syed Mashruk, Agustin Valera-Medina
P2-14	Sensitive ammonia flame thermometry using mid-infrared laser absorption spectroscopy	Shengyao Lu, Lihao Ma, T Wan, Q Li, JW Zhou, Y Wang
P2-15	Experimental investigation of premixed ammonia/air combustion at a porous media burner	Keke Li, Zou Wu, Xu Meng, Jiwei Ni, Jike Liang, Xinghua Xie, Kaixin Xiang, Shidong Fang
P2-16	Effect of oxygen content on detailed chemical structure in ammonia/ethylene counterflow diffusion flames	Yaoyao Ying, Qige Deng, Dong Liu
P2-17	Numerical investigation of multiple hydrogen injection in ammonia-hydrogen combination engine with injecting jet ignition	Jin Yu, Zhaoting Li, Shiyong Liao, Yituan He

P2-18	An experimental investigation of pre-cracked ammonia as an alternative fuel in micro gas turbine combustion chamber	Tao Yuan, Zhiqiang Chen, Xuejun Fan, Longwei Chen, Kun Wu
P2-19	Ammonia-methane combustion on an alumina packed bed porous media reactor	Claudio Munoz, Paula Rojas, Christian Hernández, Aravind Balakrishnan, Syed Mashruk, Agustin Valera-Medina, Mario Toledo
P2-20	Electrochemical nitrogen fixation reaction: Key research needs from an industrial perspective	Xuerui Zhang, Yue Wang, Yue Zeng, Xiwen Song, Boyan Chen, Haijun Zhong
P2-21	Flame structures and NOx emission of hydrogen-ammonia mixed swirling combustion	Mingcheng Ma, Sixiao Luo, Yuqian Chen, Jianghuai Cai, Yue Huang, Huiliu Zhang
P2-22	Analysis of the effects of active pre-chamber intake parameters and ignition time on ammonia combustion and emissions	Jieming Wang, Hu Wang, Zining Yu, Lin Xu, Mingfa Yao
P2-23	Total cost of ownership analysis of hydrogen/ammonia continuous rotating detonation micro gas engine system	Dai Wen, Wang Bing
P2-24	Study of the ammonia ratios on NO generation characteristics in a self-stabilizing ammonia-coal co-combustion furnace	Jie Chen, Mingyan Gu, Shuanglong Li, Xin Wei, Yong Wu, Chuanfu Chen, Xiangyong Huang, Ping Chen
P2-25	Co-oxidation of ammonia and ethylene: An experimental and kinetic modeling study	Qiao Wang, Peng Zhang, Zhaohan Chu, Bin Yang
P2-26	Assessment of chemical kinetics mechanisms performance for predicting ignition delay time and laminar burning velocity for ammonia/hydrogen mixtures	Adalberto Salazar, Mario Toledo, Roberto Leiva, German Amador
P2-27	Evaluation of differential diffusion on the performance of a four-fuel- stream flamelet model for large-eddy simulation of turbulent pulverized coal/ammonia co-combustion	Zhen Wang, Xu Wen
P2-28	Numerical study on the flash boiling criterion of liquid ammonia	Jiwen Yin, Jiaying Pan, Shiduo Wang, Haiqiao Wei
P2-29		
P2-30		
P2-31		