Agenda - CYPHER 2nd General Meeting

Monday - 19/5/25	
8:00	Registration / Sign attendance list
09:00 - 09:15	**Welcome with Katarzyna Bizon (Local Organiser, Cracow University of Technology) and Alessandro Parente (Chair, ULB)**
09:15 - 10:15	**Keynote Speaker WG1**: Maria Uxue Alzueta
10:15- 10:45	Break
10:45 - 13:00	Poster **Pitches**
13:00 - 14:00	Break
14:00 - 15:00	**Keynote Lecture WG2:** Christos Frouzakis
15:00 - 15:45	Poster **Pitches**
15:45 - 16:15	Break
16:15 - 17:00	Poster **Session**
18:30	**Guided Tour (more detailes to be provided)**

Tuesday - 20/5/25	
8:30	Registration / Sign attendance list
09:00 - 10:00	**Keynote Speaker WG3**: Pawel Morkisz
10:00- 10:30	Break
10:30 - 11:30	**ERC Roundtable**
11:30 - 13:00	Poster **Pitches**
13:00 - 14:00	Break
14:00 - 15:00	**Keynote Lecture WG4:** Olga Fink
15:00 - 16:00	Poster **Pitches**
16:00 - 16:30	Break
16:30 - 17:30	Poster **Session**
19:30	**Dinner**

Wednesday - 21/5/25	
8:30	Registration / Sign attendance list
09:00 - 10:00	**YRI - Gender:** Paola Poppesso
10:00- 11:00	YRI-Gender Activities
11:00- 11:30	Break
11:30 - 12:00	**STSM Testimonials**
12:00 - 12:20	Grants presentation
12:20 - 13:00	**Data Challenge presentation**
13:00	Break for lunch
	FAREWELL

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Poster Programme - CYPHER 2nd General Meeting

Monday - 19/5/25 – Session 1: 10:45 – 13:00

Fundamental and Applied Combustion Chemistry

1. **Combustion characteristics of methane supported kerosene fuels in a turbulent model gas turbine combustion chamber.**
   Bugrahan Alabas
2. **Unveiling Flame Dynamics: Hydrogen-Enriched Combustion in an Optically Accessible Pilot-Scale Chamber**
   ***Sven Eckart**, Hartmut Krause*
3. **Dynamic analysis of hydrogen-assisted distributed kerosene flames**
   ***Réka Anna Kardos**, Jiří Hájek, Milan Malý, Jan Jedelský and Viktor Józsa*
4. **Effects of Hydrogen Rich Synthetic Gas Addition on Ammonia Combustion**
   Ozan Kekul
5. **Measurement of the laminar burning velocity of hydrogen/methane-oxygen mixtures using a micro-cone flame**
   ***Anna Hasche**, P.A.B. Braeuer, F. J. Bauer, S. Will, H. Krause, S. Eckart*
6. **A revised skeletal kinetic model for pyrolysis and oxidation of oxymethylene ethers (OMEn, n=1-3)**
   ***Francesca Loffredo**, S. Girhe and H. Pitsch*
7. **Dissociation reactions of S8 and oxidation reaction of S8 with O2**
   ***Nadia Sebbar**, H. Bockhorn, S. Harth, M. Fedoryk and D. Trimis*
8. **A compact kinetic reaction mechanism for NH3/H2 flames**
   ***Tibor Nagy,**,A. Alnasif, J. Jójka, M. Papp, A. G. Szanthoffer, M. Kovaleva, T. Turányi, S. Mashruk, A. Valera-Medina*
9. **Impact of co-fueling ammonia with hydrogen and dimethyl Ether on Bunsen flame stabilization and NOx formation: a numerical study**
   ***Alessandro Stagni**, Robert Schmitz and Federica Ferraro*
10. **Investigating the combustion of dimethyl ether and dimethyl ether/hydrogen mixtures by chemical kinetic modeling**
    ***Ákos Veres-Ravai**, István Gy. Zsély, Máté Papp, Tamás Turányi*
11. **New evaluation of hydrogen combustion mechanisms using an updated and revised experimental data collection**
    ***Ilya.E. Gerasimov**, I.Gy. Zsély, M. Papp, T. Turányi*
12. **Comprehensive testing of recent detailed combustion mechanisms against NH3 and NH3/H2 experimental data**
    ***András Gy. Szanthoffer**, Máté Papp, Tibor Nagy, Tamás Turányi*

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13. **The Effect of Methane Kinetics on the Dynamics of Laminar Slit Flames**
    ***Cillian Thomas**, Stephen Spence, Charles Stuart, Stephen Dooley, Sandeep Jella, Marc Furi, Gilles Bourque*
14. **Combustion characterization of various fuel blends in a reverse flow, micro gas turbine combustor**
    *Mohamed Salah Eddine Salah, **M. Mustafa Kamal**, Lyes Tarabeta and Alessandro Parente*
15. **On the generalization of Oberlack's definition of MILD combustion**
    ***Adam Klimanek**, Sławomir Sładek, Katarzyna Bizon*
16. **Colorless Distributed Combustion (CDC) Effects on Hydrogen – Methane Composite Fuel Mixture Combustion Characteristics**
    ***Berre Kumuk**, and S. Karyeyen*
17. **Numerical Study of Hydrogen and Carbon Monoxide Flame Propagation for Nuclear Safety Application**
    *J. Venckus, **M. Povilaitis** and A. Ambrutis*
18. **Investigating the Effect of Dilution and Pressure on Methane Synthesis Using Metamodels**
    ***Tim Franken**, Monang Vadivala, Saurabh Sharma, Tobias Gloesslein, Arnim Brüger and Fabian Mauß*

Monday - 19/5/25 – Session 2: 15:00 – 15:45

Advanced Modelling Techniques for Turbulent Flames

1. **Two-dimensional flamelet manifolds for turbulent and thermodiffusively- unstable hydrogen flames: an a-priori analysis**
   ***Alessandro Porcarelli**, P.E. Lapenna, F.Creta and I. Langella*
2. **Numerical analysis of the transition to MILD Combustion in counterflow flamelets via Principal Component Analysis**
   ***Biagio Cassese**, Giancarlo Sorrentino, Mara de Joannon and Raffaele Ragucci*
3. **Modelling Pollutant formation in Turbulent Non- Premixed Flames using Convolutional Neural Networks**
   ***Geveen Arumapperuma**, Dikran Bakkalian and Antonio Attili*
4. **Development of a Local Reduced-Order Model Framework for Combustion Systems Using Soft Clustering**
   ***Chiara Novelli**, Alberto Procacci, Lorenzo Giuntini, Alessandro Piscopo, Axel Coussementa, Alessandro Parente*
5. **Pressure field reconstruction based on steady-state simulations residuals and machine learning**
   ***Vid Zuljan**, Tine Seljak*
6. **Extension of the Partially Stirred Reactor Models for Oxy-Fuel Combustion Simulations**
   ***Tamara Osseily**, Alessandro Piscopo, Lorenzo Giuntini, Marco Lubrano Lavadera, Alessandro Parente*

TUESDAY - 20/5/25 – Session 3: 11:30 – 13:00

Multi-Fidelity Models, and Sustainable Energy Solutions

1. **Can organic oxygenates improve ammonia combustion?**
   ***Adrián Ruiz-Guitérrez**, M.U. Alzueta*
2. **Reducing Carbon Emissions in Energy-Intensive Industries Using Plasma-Assisted Combustion**
   ***Justas Eimontas**, N. Striūgas, K. Zakarauskas and A. Tamošiūnas*
3. **Plasma effect on thermal radiation from NH3/CH4/H2 flames**
   *I.Ambrazevičius and **Rolandas Paulauskas***
4. **Development of a high-power density sulphur burner as a step for establishing sulphur as a carbon-free chemical energy carrier**
   ***Michal Fedoryk**, S. Harth, N. Sebbar F. Zhang and D. Trimis*
5. **CFD simulation of internal and external injector fuel flow for alternative fuels spray atomization and data-based injection model development**
   Charalambos A. Chasos
6. **Industrial reheating furnace modelling: Impact of partial electrification on products**
   ***Jetnis Avdijaj**, P. Biswal, M.Bentivegni, A.Parente and A. Coussement*
7. **Assessing spectral filters and direct color imaging of hydrogen-enriched kerosene combustion flames**
   ***Krisztián Sztankó**, Réka Anna Kardos, Gyöngyvér Tóthpálné Hidegh, Dávid Csemány, Viktor Józsa*
8. **Preliminary analysis to understand the potential of a chemiluminescence and machine-learning-based method for sensing in a Cyclonic reactor**
   ***Vincenzo Rosati**, Vicente Castro, Giancarlo Sorrentino, Pino Sabia, Raffaele Ragucci and Mara de Joannon*
9. **A Multi-Level Multi-Fidelity Framework Informed by Experimental Data for Digital Twin Development**
   ***Aysu Özden**, Ebrahim Rahmani, Natalia Cid Rodríguez, Francesco Contino and Alessandro Parente*
10. **Mechanism-Reduction-Driven Clustering of the Operating Parameter Space for NH_3/H_2 Premixed Flames**
    ***O. Bucca**, R. Malpica Galassi*

Tuesday - 20/5/25 – Session 2: 15:00 – 16:00

Advanced Modelling Techniques for Turbulent Flames

1. **Hydrogen scale-resolving simulation activities at Aalto University using OpenFOAM for non-premixed combustion and supersonic injection**
   ***Ville Vuorinen**, Parsa Tamadonfar, Aleksi Rintanen, Ali Haider, Ilya Morev, Ossi Kaario, Shervin Karimkashi*
2. **Utilization of ammonia and its blends as alternative fuels**
   *Z. Kahraman, M. Hacı and **Hakan Serhad Soyhan***

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3. **Photocatalytic Hydrogen Evolution by Kaolinite Based Catalysts**
   Talha Kuru, Emre Aslan, ***Imren Hatay Patir****, Mustafa Ersoz*
4. **Waste-To-Fuel Technology In Albania – Development System To Support An Active Drilling Industry**
   B. Hoxha, B. Dervishi, , K., Bahja, ***Artan Leskoviku***
5. **Risk Mitigation Strategy for the Installation of a WtE Cogeneration Plant in the City of Skopje**
   Monika Uler-Zefikj*, Aleksandar Argilovski and Risto Filkoski*
6. **Multi-Criteria Decision-Making Approaches for Evaluating Waste-to-Energy Scenarios**
   Aleksandar Argilovski, Monika Uler-Zefikj and Risto Filkoski
7. **Impacts of energy-intensive industries on greenhouse gas emissions**
   Zafer Kahraman*, M. Hacı and Hakan Serhad Soyhan*
8. **Perspectives of digital twin technology in real-time motorway traffic control**
   Krešimir Kušić*, Edouard Ivanjko, René Schumann, V. Cahill, and I. Dusparic*