

SPOTLIGHT ON...

MEET THE TECHNICAL PROGRAM CO-CHAIRS!

Monday morning, our Technical Program Co-Chairs Prof. **Bassam Dally** (KAUST, Saudi Arabia) and Prof. **José Torero** (UCL, United Kingdom) introduced the Technical Program and explained the changes in place at the 40th Symposium, and what led them to these decisions. Also, they showcased impressive submission numbers!

The biggest change for the community was the introduction of the Oral Paper Presentation (OPP) and Poster Paper Presentation (PPP) split. With 85% of the submissions being made as OPPs, only a small percentage were switched between the OPP and PPP formats, and the acceptance ratio for both types was almost identical.

We caught up with the busy Program Co-Chairs, Bassam and José, afterwards to ask them a few questions...

Which principles guided the changes in the organization of the symposium?

JT: The changes were motivated by a series of surveys of the community. The OPP/PPP split was changed in response to the increasing number of submitted papers. Either an untenable number of sessions would need to be held concurrently to accommodate more OPPs, or a frustratingly low acceptance rate would need to be implemented to keep the number of sessions low. Instead, our better solution was to introduce OPPs/PPPs, both of equal caliber, and therefore rate of acceptance. We need to move away from the idea that format of presentation is a measure of quality.

BD: The interference of COVID gave an opportunity to reflect on how the Symposium has been run, and we found a real purpose for change, as opposed for instituting change for change's sake. The aim is for the community to thrive and grow— and for the Symposium: we want it to be an enjoyable experience. Insofar as the Symposium should foster collectiveness, limiting the number of concurrent sessions and providing dedicated time for discussion of the PPPs both support this.

Would you have done anything differently?

BD: No.

Did the organization go as smoothly as you had hoped and how was the interaction with the host team?

JT: I was expecting a lot more problems and a lot less work.



FEATURED LECTURE - Future Fuels...

HOTTEL LECTURE BY PROF. DR. -ING. HEINZ PITSCH

Prof. **Heinz Pitsch** (RWTH Aachen University, Germany) was hoping to start his Hottel Lecture a bit ahead of time due to his having “too many slides, as always” - yet also as always, the technology worked great one day, but not the next! So, Prof. Pitsch started rolling at 9:36, and made sure we all had our coffee break on time!

His lecture was inspiring, touching mostly on hydrogen combustion and on the fundamental aspects behind hydrogen behavior and instabilities, and how AI can aid in simulating this complex system. Fascinating! Also, as he explained through a fun cartoon, AI + hydrogen is a good answer before even asking the question...



The energy transition is viewed differently in different countries. How do you see the role of the Symposium in bringing these perspectives together?

“Different countries need to have different views because of the resources, culture, and industries in each country. Still, the entire world should aim to move towards the transformation to renewable energy. Because of the missing system’s perspective that is unique for each country, the Combustion Symposium cannot mandate a unique way forward. However, its important role is to pursue a technology-open path and provide options for solutions that can be picked up in different energy systems. Perhaps more importantly, the Combustion Symposium is unique in bringing the entire combustion community together. This leads to many international discussions and collaborations providing a great way for knowledge diffusion around the world.”

From your experience e.g., on hydrogen research, how can our community engage in discussions with non-combustion research fields to improve the external perception of combustion research?

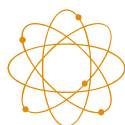
“As I said in my lecture, combustion is a technology that brings a huge benefit to society. Making combustion clean is one of the most important challenges in this century and once we make more progress in transitioning to more renewable fuels, also the perception will change. I think combustion research is a very important and also exciting topic. We need to talk about the fact that our work supports the energy transition and in my personal opinion, we should certainly not pretend we do something else or use different names for our research field.”



Symposium Program Co-Chairs, José Torero (Left) and Bassam Dally (Right), deliver remarks onstage.



Prof. Heinz Pitsch delivering a fascinating Hottel Lecture!



SCIENTIFIC HIGHLIGHTS

MILD COMBUSTION EXPLAINED BY MARA DE JOANNON

The first topical review at the Symposium was by Dr. **Mara de Joannon**, Senior Researcher at STEMS-CNR (Italy). Dr. de Joannon presented her perspective on MILD combustion, which she's worked on for a while now...

Let's see what she shared with us after the talk!



For how many years have you focused on MILD combustion?

"I work in the field of MILD combustion since 2000, when we started not many people believed in a success, because direct implementation of this approach was not expected. Main interest at the beginning was on pollutants reduction. Another topic that time was an attempt to burn heavy oil.

When energy transition started, it gave additional motivation to investigate applications because MILD combustion technology is really fuel-flexible allowing to burn many renewable and uncommon fuels from hydrogen to ammonia. In addition, this technology is not limited to combustion, but may help in fuel dry reforming for CO₂ utilization."

Do you have an expanding/growing working group?

"Because of this renewed interest in MILD combustion it became easier to attract both national and European funding, but also from heat and power industries, and motivate young generation to perform research. Currently we have eight PhD students and researchers working in our team. We focus our research towards high-pressure conditions and even sustainable aviation fuels. One of the important prospects is a development of soft sensing of the process parameters for control using digital twin of the investigated reactor."

How do you motivate young fellows/students to study MILD combustion?

"Young fellows are often impressed by the specific features of the MILD combustion, such as absence of flame, stability and efficiency. They also believe that they will get very specific skills useful and helpful for future industrial development to realize the energy transition because there are many new unexplored issues in the MILD technology compared to traditional combustion applications."



Attendees enjoy some refreshments!



From L to R: CI President Philippe Dagaut, Profs. Bassam Dally, Tiziano Faravelli, Isabella Nova (Vice-rector at Politecnico di Milano, Italy), José Torero



COFFEE TALKS

FEEDBACK FROM YOUNG SYMPOSIUM NEWCOMERS!

During the coffee break, we asked young Symposium newcomers about their experience, and what they are looking forward to seeing at the conference:

Timothée Fages (Ph.D. Student, LRGP – CNRS, France)

"I was at the FC workshop and found it great. As I work with huge reaction mechanisms for gasoline and biofuels, so I'm looking forward to seeing discussions about mechanism optimization, automated generation of kinetic rates, and species profile predictions. I wish there were also more artificial intelligence applied in those fields."

Caio Ramalho Leite (Ph.D. Student, PRISME, France)

"I found the first plenary section particularly interesting, as it was about hydrogen flames which is one fundamental aspect of my thesis, that is about hydrogen-fueled internal combustion engines. I'm looking forward to seeing more about other hydrogen technologies, as well as the banquet in the Alfa Romeo Museum."



COFFEE TALKS

AN INDUSTRY PERSPECTIVE

In line with Monday's Hottel Lecture topic, during both coffee breaks and in the Exhibition Hall, participants engaged in conversations on hydrogen fuel along with attendees from industry. And indeed, all providers of combustion equipment present in the Exhibition Hall could provide evidence and performance data of *H2-ready* stamped burners in their portfolio. However, another fuel seemed to attract very much attention, both inside the session rooms and in the corridors of the MiCo... Yes, ammonia, which has been served in multiple recipes: pure, cracked, with methane, in liquid form, etc. But we bumped into a couple familiar industrial equipment suppliers, and for the time being they only hear whispering of ammonia. **Marcello Bardotti**, representing **ESA S.p.A**, admits that the industrial furnace and burner customers have not inquired about ammonia yet, while **Michal Hradisky** from **Zeeco** says it's coming. The Symposium is definitely the right place to sense the future needs in the energy transition and development strategy of these companies!

What is the Symposium Tribune? It's a daily bulletin that will keep you updated on all the key highlights and events happening at the Symposium, including interesting scientific talks and interviews to speakers, organizers, awardees. You will also find opinions from participants, and insights into social events in case you can't make it!

Contributors: Luna Pratali Maffei (POLIMI), Fabiola Citrangolo Destro (LL-CNRS), Lauren Creadore (CUNY), Mario Di Taranto (SINTEF), Ali Elkhazraji (KAUST), Federica Ferraro (TU-Braunschweig), Alexander Konnov (Lund University), Yuyang Li (SJTU), Zhuyin Ren (Tsinghua University), Maria Virginia Manna (STEMS-CNR), Max Schneider (TU Darmstadt), Junggho Sohn (KAIST), Stephen Tse (Rutgers), Augustin Valera-Medina (Cardiff), Draven Marino (The Combustion Institute), Tiziano Faravelli (POLIMI)

Feedback is always welcome, and can be submitted via Telegram: <https://t.me/CombustionSymposium2024/2>