

## Hazelab Newsletter –Imperial College London

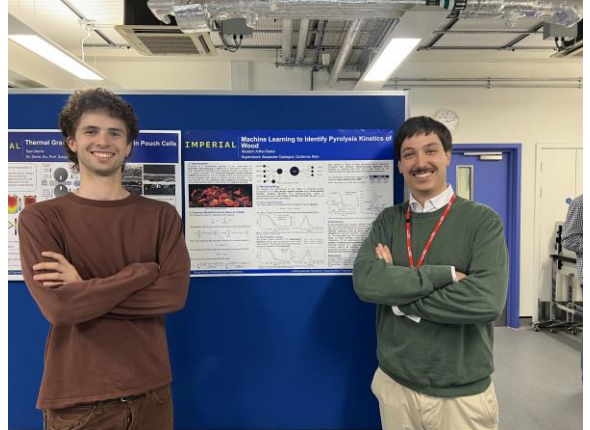
May 2025 – October 2025

Hello friends of Imperial Hazelab! Welcome to another update of our recent activities on research and engineering.

For more news visit our [website](#), [publications](#), or watch our [video](#).

### Graduating and arriving students

This past month we said goodbye to two of our Hazelab members. **Nick Kalogeropoulos** successfully passed his viva in July and is now moving to the US, where he will be taking on an exciting new position in wildfire modelling at Cloudfire. **Harry Mitchell**, after 8 years as part of Hazelab, is also leaving us to join Trigon, and we wish him the very best in this next chapter. On a brighter note, we are delighted to welcome to Imperial **Mauro Innocente** as Advanced Research Fellow, who will be working on drone swarms for wildfire emergencies. We are also excited to have **Auriane Javaloyes** officially joining the group as a PhD student, funded by Knauf, where she will be focusing on the fire performance of mineral wool used in building insulation. Over the summer, we also had a UROP student, **Arthur Baker**, joining the group to work on Machine Learning for pyrolysis kinetics. Finally, we have welcomed **Frixos Papachristodoulou** as a research assistant to investigate the influence of vapour pressure deficit on wildfires.



### Awards



We are thrilled to announce that **Nick** has been awarded the 15<sup>th</sup> IAFSS Best Thesis Award (Europe and Africa) which he will receive next summer at the International Symposium in La Rochelle. His thesis, titled “Wildfire Simulations to Protect Rural Communities and Avoid Dire Evacuations”, focuses on the development of joint wildfire dynamics – evacuation models to ensure rural community safety.

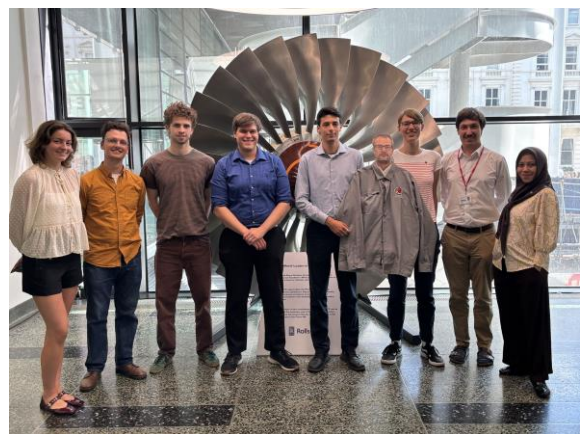
At the 11<sup>th</sup> International Symposium on Fire and Explosion Hazards (ISFEH), held in June in Rome, **Alexander Castagna** was awarded “Best student-led paper” for his study on “Physics-based model for wood charring accurate for a wide range of compartment fire conditions”. For his teaching the Combustion Safety and Fire Dynamics module at Imperial College London, **Alexander** was awarded the “Best Graduate Teaching Assistant” in the Department of Mechanical Engineering.

### Internal events and visitors

In May, we welcomed members of the Civil Protection of Greece, for an exchange on wildfire emergencies.

Taking advantage of Interflam in London, we were also honoured to host several international visitors at Imperial Hazelab:

- Jonathan Hodges who introduced Jensen Hughes’ work and research.
- Jason Floyd from UL Fire Safety Research Institute, who gave a seminar on sub-grid scale chemistry modelling in FDS.
- Sara McAllister from the USDA Missoula Fire Sciences Laboratory, who shared an overview on wildfires research.
- Vincent Brannigan, Professor Emeritus at the University of Maryland, gave a talk on performance-based fire safety regulation, with Barbara Lane from ARUP among the attendees.



We welcomed to Imperial the editorial board of Fire Technology concurrent with the 60<sup>th</sup> birthday of the journal.

More recently, we were pleased to host Juan Carlos Pina from Universidad de Santiago de Chile, with a talk on timber fires in buildings.

### **Conferences and outreach**

The past six months have been incredibly busy for Hazelab in the department of conferences and outreach. In May, **Nick** and **Auriane** attended the WFRM's 3rd Wildfire Risk Management Clustering Event, held in Brussels in May. There they presented a poster on the layers of wildfire protection. Also in May, **Guillermo Rein** introduced and **Hanna Berry** attended a training course lead by Nicholas Bartlett on NFPA 855, the standard for the installation of stationary energy storage systems.



**Nick** and **Guillermo** attended and presented at the SFPE AI in Fire Engineering Summit at UC Berkeley, **Guillermo's** Alma Mater. **Guillermo** then took the opportunity to visit the Pacific Palisades community in California after the disastrous wildfire that had damaged the area six months prior.

In June, **Alexander**, **Nick** and **Afi Mulyasih** presented their work at the 13<sup>th</sup> Mediterranean Combustion Symposium in Corfu, where they engaged in discussions with the wider combustion community. A week later, **Alexander**, **Nick**, **Harry** and **Afi** presented their work at the 11<sup>th</sup> International Symposium on Fire and Explosion Hazards in Rome. It was a great occasion to reconnect with alumni from Hazelab.

**Guillermo** gave a keynote presentation at the 5<sup>th</sup> International Fire Safety Symposium 2025 in Ulster, titled "Timber Towers? Enhancing Fire Safety and Sustainability in Modern High-Rise Buildings".

The full Hazelab team – **Alexander**, **Auriane**, **Afi**, **Nick**, **Harry**, **Hanna** and **Guillermo** – attended the Interflam conference in Royal Holloway, just outside of London, catching up with collaborators and discussing new research project while presenting the work of the past year. **Guillermo** gave the plenary lecture of the conference, titled "Wildfires and Safety at the Crossroads: Global Lessons and the Path Forward".

**Alexander**, **Auriane** and **Hanna** then attended Fired-Up, held at the University of Liverpool. It was a great opportunity to meet with colleagues and friends from the fire science community from the UK!

Finally, **Alexander** presented at the Current Research in Combustion Conference in Cambridge.

Following filming late last year, the Netflix documentary Grenfell: Uncovered was released in June. It is a harrowing look into the Grenfell tragedy and the following inquiry, and it features an interview with **Guillermo** and lab demos on Aluminium Composite Material (ACM) conducted by **Carlos Walker-Ravena** and **Guillermo**.



We were also very excited to participate in the filming with the popular science YouTube channel, Veritasium, for their episode titled: "This Battery was almost too dangerous to exist" which discussed the development of the Lithium-ion battery and its hazards. **Hanna**, **Harry**, **Nik** and **Guillermo** conducted controlled battery fire demos for the video and an interview with **Guillermo** also featured. The video already has almost 20 million views on [Youtube](https://www.youtube.com/watch?v=8v8v8v8v8v8).

During a heatwave in August, the BBC published pieces discussing the increased risk of wildfires associated with dry



weather, featuring interviews with **Guillermo** across Radio (BBC Today programme), Television (BBC Breakfast) and [Online](#).

### **SFPE Greater London student chapter**

In collaboration with the students of the fire research groups at University College London and King's College London, **Alexander**, **Hanna** and **Auriane** have relaunched the SFPE Greater London Student Chapter, with the aim of uniting London fire research students, promote collaboration and events related to fire research and fire engineering. **Alexander** was elected as the representative from Imperial, with Abdullah Rehman being the representative of King's and Sergio Caponi the one from UCL. They officially launched the Chapter with their first event in October, a London-Fire-themed pub quiz!



### **Journal Publication**

*Multidisciplinary in Fire Science: The Importance of Domain Knowledge in a Wave of New Contributions Fire Technology*  
<https://doi.org/10.1007/s10694-025-01821-y>

*Historical investigation into the first burning model of a solid fuel and the origin of the Crank–Nicolson numerical method Applications in Energy and Combustion Science* <https://doi.org/10.1016/j.jaecs.2025.100404>

*Modelling the probability of smouldering ignition of vegetation from hot metal particles ejected by power lines Fire Safety Journal* <https://doi.org/10.1016/j.firesaf.2025.104537>

*Visual analysis of firebrand transport from a large mass timber compartment fire Fire Safety Journal*  
<https://doi.org/10.1016/j.firesaf.2025.104458>

*Fire Inside the Cavity of a Non-flammable Facade: Step-by-Step Development of Multiphysics Computer Simulations Fire Technology* <https://doi.org/10.1007/s10694-024-01680-z>

*Heatwaves and firewaves: the drivers of urban wildfires in London in the summer of 2022 Fire Technology*  
<https://doi.org/10.1007/s10694-025-01737-7>

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