

Hazelab Newsletter – Imperial College London

October 2019 – January 2020

Hello! Welcome to another update from Imperial College London.

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New Arrivals

In January, Erika Tomita joined us for a 5-month research project working on façade fires. She is an undergraduate student at Toyohashi University of Technology in Japan supervised by Prof Yuji Nakamura. Welcome to Hazelab, Erika!

Graduating Students

Franz Richter successfully passed his PhD thesis defence in October – congratulations Franz! He has now taken a position as a postdoc with us funded by EPSRC. Soon he will be moving to sunny California to take on a postdoc position at UC Berkley.

Departures

Francesco Restuccia accepted a lectureship position at Kings College. Francesco has joined and is helping to create the brand-new engineering department at Kings College London. After many years of exemplary research in Hazelab with us we are sad to see him go, but proud of his achievement and excited for his bright future. Good luck, Francesco!

Conferences

Harry presented his master's thesis at the England and Wales Wildfire Forum (EWWF) in November, hosted at the principality stadium in Cardiff. During his masters project, he developed PERIL (Population Evacuation Trigger algorithm), a toolkit for developing evacuation triggers for communities in the wildland urban interface in the case of a wildfire.

A large group from Hazelab participated in the 1st International Fire Science Workshop in Valparaiso, Chile. They enjoyed learning from leaders in the field of fire science, meeting researchers from all around the globe, and then chilling with them in the sun by the pool with pisco sours in the evening. Best week of the year!

Guillermo gave a talk at the EU Fire Safety Week on performance-based design to the Institute of Mechanical Engineers in London. Guillermo and all the Arup funded PhD's of the group gave seminars for the UK Arup fire team on their recent research. The seminars were part of the CPD weekly sessions organized by the fire team.

Awards

Yuqi Hu won the 2019 Katapodis Prize for the best PhD thesis in Thermofluids division at Imperial College. His thesis 'Experimental Investigation of Peat Fire Emissions and Haze Phenomena' showcases his work on fire science. Great job Yuqi! Also, a big congratulations to Franz for winning the 2019 Lloyd's Register Foundation 'Student Communicator of the Year' competition!



Figure 1: Franz, Student communicator of the year!

Francesco's PhD thesis on self-heating ignition of porous media got honorary mention for 2019 IAFSS best thesis award.

Guillermo won the President's Award for Excellence in Research Supervision. This is an annual award to recognize staff at Imperial College who have made outstanding contribution in education. He was also conferred the FORUM 2019 Mid-Career Researcher Award.

Matthew Bonner won the photo competition at Imperial's Mechanical Engineering Department with a beautiful shot of three high rise buildings in the City of London. One of the captured buildings is the Scalpel, a 40-story building designed using the Improved Travelling Fire Methodology developed by Hazelab.



Figure 2: The Scalpel and co.

Large-scale Experiments

A second round of travelling fire experiments were performed in Poland under the name Obara x-TWO. These experiments are the fruit of a long collaboration between Hazelab, Arup UK, ITB Poland and CERIB France. The data collected from these will be used to verify and validate the Improved Travelling Fire Methodology.

Also in Poland, our façade team, in collaboration with ITB and Arup, performed a series of original experiments on façade systems with flammable components. The cladding panels investigated for fire performance included HPL and ACP.

Our team of peat fire researchers went to Flow Country (North Scotland) and spent two days in the field collecting peat from locations near the fire scar. The peat samples they brought back will be used to perform several experiments in our lab at Imperial College; the experiments are aimed at understanding the fundamental mesoscale science of smouldering peatland fires.



Figure 4. Hazelab goes to Chile



Figure 3: Team haze in Flow Country

Launch of Leverhulme Centre for Wildfires

Hazelab is part of the £10m centre for Wildfires, Environment and Society which was created in Imperial and King's College. In November, Hazelab took part in the launch of the centre and exhibited posters showcasing our research on forest and peatland fires. In the next few

months we will be hiring a PhD student who will be working on the fundamentals fire dynamics of arctic fires as part of this project.

Outreach

In October we exhibited at New Scientist Live, the biggest science festival in Europe. In the 2019 edition our stand was very successful with kids and grown-ups alike thanks to Sirocco, our homemade fire tornado, therefore this year we were invited again and were assigned a bigger stand. Guillermo also gave a public talk on one of the main stages, the engineering stage of course.



Figure 5: Imperial College stand at New Scientist Live 2019

Matt's research on façade fires featured on the front page of the [Financial Times](#) and Guillermo was cited in an article of [The Economist](#) on arctic fires.

In January we had the pleasure of presenting our research at the London Fire Brigade Headquarters for the CPD event organized by the LFB fire engineering team. Talks from Ben, Matt, Franz and Francesca covered facades, timber, and structural cables in the context of fire safety. Overall, a great event that resulted in many interesting discussions!

SFPE Greater London Student Chapter

The student chapter has kept us very busy this winter with five interesting seminars, a fire themed pub quiz and the long-awaited Christmas party. We have hosted our first seminar at Kings College where the newly appointed lecturer Francesco Restuccia gave a great presentation summarizing 8 years of research - it was impressive that he kept it to 45 minutes! We also hosted a couple of seminars at the University of Greenwich and at the Arup Headquarters. All the talks have been recorded and are available on our [website](#).

Finally, we would like to send a huge thanks all of the academics and engineers who were kind enough to visit us and share their expertise and diverse experiences with the group. Thank you to Prof. Vincent M Brannigan (University of Maryland), Dr Benjamin Ralph (Foster+Partners), Dr Francesco Restuccia (King's College), Dr John Gales (University of York), Danielle Antonellis (Arup), Dr Claire Burke (Liverpool John Moores University), Malcom Wise (University of Newcastle).

That's everything from us for now – we look forward to seeing you at IAFSS conference in Waterloo!