



*The Charitable Trust Fund of the
Worshipful Company of Engineers
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The Worshipful Company of Engineers



The Hawley Award for Engineering Innovation

A £5000 prize for Engineering Innovation that helps to achieve Net Zero Carbon

Applications are invited for The Hawley Award, which was established in 2006, and is awarded annually for the most outstanding Engineering Innovation that delivers demonstrable benefit to the environment, specifically, helping to achieve Net Zero Carbon by at least 2050. **The deadline for applications for the 2022 Award is Sunday 10 April 2022.**

The award is by Worshipful Company of Engineers, a London Livery Company (www.engineerscompany.org.uk), via the Engineers Trust (www.engineerstrust.org.uk).

To be eligible for the award, the application must be made by:

- A candidate who is resident in the UK and a graduate or more senior member of a recognised Professional Engineering Institution.
- Is an early career stage engineer or scientist, in academia or industry, typically within 10 years of starting a professional career.
- An individual candidate who has personally produced an engineering innovation. Exceptionally, a small team may be considered where the innovation has a highly multi-disciplinary nature.

The Innovation will:

- Have demonstrable benefits in the drive to achieve Net Zero Carbon by at least 2050.
- Arise from work undertaken after the award of a graduate or post-graduate degree from a recognised UK university or during study for a post-graduate degree. Work undertaken for a BSc or MEng will not be eligible.
- Have at least reached a stage where a prototype has been developed or proof of concept demonstrated, and there is an expectation that the technology will be developed commercially. The results of laboratory based research will not of themselves be sufficient to qualify for the Award.

The Prize

The Award comprises a cash prize of up to £5,000, an engraved medal and a certificate, which will be presented at the Worshipful Company of Engineers Annual Awards Dinner in July. The cash is to be used in furtherance of the winner's career, such as educational overseas travel, and the winner will be expected to submit a short report, which may be published, on how the money has been used.

Hawley Award Manager: Barry Brooks BSc(Eng) CMarEng CEng FIMarEST FIET FCGI

Secretary to the Trustees: Mr Simon Howison FREng

Saddlers' Housel, 44 Gutter Lane, London EC2Y 6BR

E-mail: Hawley.award@engineerscompany.org.uk Tel: 0796 806 3301 Web site: www.engineerstrust.org.uk

The Process

Written submissions (preferably by email to Hawley.award@engineerscompany.org.uk) should be made **by Sunday 10 April 2022**, by completing the attached form (copy available at: www.engineerstrust.org.uk), accompanied by a report of no more than 1,000 words in English, together with diagrams, if appropriate. The submission should demonstrate how the development has, or would, make positive improvements to the achievement of Net Zero Carbon by at least 2050, and must be certified by a director or senior manager of the organisation to endorse that the candidate did make the contribution claimed.

Following receipt of submissions, a short list of candidates will be selected, and individuals will be required to attend an interview (probably via Zoom) on **Wednesday 20 April 2022** and make a 15-minute presentation to be followed by questions posed by an Award Interview Panel. The winner will be notified after all presentations have been assessed, and the award will be presented at the Company's Annual Award ceremony in London on **Thursday 14 July 2022**, when the winner will be invited to dine with the Company.

The Company will require the right to publish the winning submission in its in-house journal and to provide it to sponsoring organisations.

Previous Winners

2021: Joint Winner – Dr Elena Dieckmann (Dyson School of Design Engineering, Imperial College), Co-founder and Innovation Lead of Aeropowder, for her development of the world's first feather based thermal packaging material under the brand name **Pluumo**. Cleaned and processed into a unique textile, before being covered in a biodegradable film for ease of handling, it delivers excellent insulation performance while lessening our impact on the environment.

2021: Joint Winner – Mr Pierre Paslier (Dyson School of Design Engineering, Imperial College), Co-founder and Co-CEO of **Notpla**, for his innovative development of sustainable packaging made from seaweed as an alternative to single-use plastic. Applications include: an Ooho capsule for liquids, a Notpla coating, and a Notpla film. These were tested in pilot trials including edible drink sachets at a London Marathon event.

2018: Robert Edwin Rouse (University of Cambridge) combined his passion for engineering with his love of the marine environment by designing a device for assisting in cleaning the oceans. His invention extracts marine and fluvial plastic pollution through integrated, commensal technologies and is timely and important in tackling single use plastics that reach the sea. Attached to a ship, one unit with a processing area of 6m² can remove up to 120 tonnes per year.

2017: Dr Amrit Singh Chandan (of **ACELERON**) for his work on **NuCycle - Lithium Ion Battery Processing to Assess Viability for Reuse**. ACELERON transforms perceived end-of-life lithium ion battery waste, using a comprehensive testing and grading process; upcycling them into repurposed battery packs. Each cell processed saves 50 kg CO₂ and is 50% cheaper than a new Li-ion cell.

2016: Solveiga Pakštaitė (of **Design By Sol Ltd**) developed "Bump Mark: the bio-reactive food expiry label", a patent-pending food expiry labelling innovation, invented by Solveiga while studying at Brunel University London. It is currently being developed at Central Research Laboratory, in Hayes, West London, supported by U+I, Brunel University London and HEFCE. It is a bio-reactive solution calibrated to experience decay at the same rate as the food it is labelling to

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provide accurate, real-time indications of the product's freshness. It will enable radical reductions in premature disposal of food by providing a more accurate indication of its "safe-to-use-by" date.

2015: Alister Smith, of Loughborough University has developed "**acoustic emission monitoring for landslide early warning**", a means of early warning of landslides through detecting accelerations of slope movement, continuously and in real-time, by quantifying slope deformation behaviour using acoustic emission monitoring. Field trials in the UK, Italy and Canada have demonstrated proof of concept and discussions have started to commercialise the approach. This has made a significant contribution to the ALARMS (Assessment of Landslides using Acoustic Real-time Monitoring Systems) project, led by Professor Neil Dixon at Loughborough University.

2014: Dr Thomas Povey, working at the Thermofluids Laboratory, University of Oxford he studied the heat transfer of cooking pans and as a result of his research has developed a striking new pan design which is very much more efficient than conventional pans when cooking on gas stoves. Pans manufactured to be suitable for consumer use outperform conventional pans by up to 40% in terms of overall efficiency. The pan has an integral external heat exchanger which extracts otherwise waste heat from the hot plume, resulting in greater efficiency of energy transfer to the contents of the pan. In addition to penetrating the hot waste gas, the heat exchange acts to stabilise the flame giving rise to improved flow of hot gas over the gas-washed surfaces of the pan. In a collaboration with Lakeland (UK) and Nordicware (USA), the pan was launched as a consumer product in July 2014.

2013: Caroline Hepburn for her work on "Online measurement of siloxanes by Fourier Transform Infrared (FTIR) spectroscopy: A new tool for enhancing engine protection during energy production from biogas", the 2013 Hawley Award goes to Caroline Hepburn, of Cranfield Water Science Institute. Biogas from sewage contains siloxanes which damage the CHP engines used for energy generation. Activated carbon beds are used to remove the siloxanes, but current monitoring techniques delay warning of bed saturation and siloxane breakthrough for up to six days. Caroline has developed the use of FTIR to monitor siloxanes, which provides immediate results, resulting in significant cost savings in engine maintenance and repair.

2012: Mr Christopher Vagg, of Bath University, working with Ashwoods Automotive Limited, for his development of a driver advisory tool that reduces fuel consumption in light commercial vehicles

2010: Mr Robert Matthews, conducting research for the Aquatest Research Programme at the Water and Health Research Centre, University of Bristol, for developing a low-cost device to help to improve the effectiveness of water-quality testing.

2009: Helen Bailey, of Aggregate Industries, for her paper on the use of waste vegetable oil as a bitumen replacement in asphalt mixtures.

2008: Mr John Robinson, for a paper that described a low cost and environmentally beneficial solution to the treatment of oil contaminated drill cuttings, of particular value to offshore oil and gas platform operations.

2007: Dr William Mayes of Newcastle University, for a paper on the use of wetlands for the treatment of highly alkaline leachates.

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Any questions:

Contact Hawley Award Manager, via Hawley.award@engineerscompany.org.uk

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